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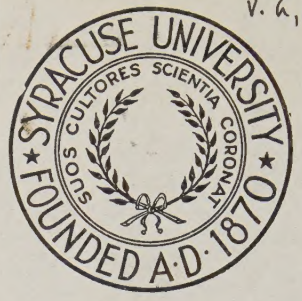

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PROCEEDINGS OF
THE INSTITUTE FOR ADMINISTRATIVE OFFICERS
OF HIGHER INSTITUTIONS · 1930

Volume II

THE TRAINING OF COLLEGE TEACHERS

INCLUDING THEIR PRELIMINARY PREPARATION
AND IN-SERVICE IMPROVEMENT

EDITED BY WILLIAM S. GRAY

Dean of the College of Education
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PREFACE

The Institute for Administrative Officers of Higher Institutions was organized at the University of Chicago in 1927 to serve at least four purposes, namely, to provide a forum for the discussion of problems of common interest to administrative officers; to stimulate critical discussions of current tendencies in higher education; to present the results of experiments carried on in various institutions; and to stimulate additional studies of many perplexing problems in the field of higher education.

Although the early institutes were very successful, desirable changes soon suggested themselves. The first related to the nature and content of the programs that were organized. Whereas at first a general program including discussions of various topics seemed desirable, the need of intensive discussions of specific topics soon became apparent. Accordingly, the policy was adopted of concentrating attention during each Institute on a specific problem, such as the junior college curriculum, and the training of college teachers. The second desirable change related to the need of making the various papers and reports available for more thorough and deliberate study, both by those who attend the Institute and by all others who may be interested. As a result, arrangements were made to publish the proceedings each year. *The Proceedings of the Institute for 1929* entitled *The Junior College Curriculum* formed Volume I of the series.

The central theme of the Institute for 1930 was "The Training of College Teachers," including their preliminary preparation and in-service training. This topic was selected because of the wide interest which has been expressed recently in increasing the efficiency of college teaching. The various papers reported in this volume appear in the order presented on the Institute program. They consider in turn the following significant issues: deficiencies in current college teaching; the academic and professional elements in the training of college teachers; desirable types of graduate training for prospective college teachers; the reorganization of postgradu-

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ate work for prospective college teachers; the enlistment of prospective college teachers; current methods of training college teachers; the nature of the general professional training needed; the nature of specific training provided by such departments as science, geography, and the romance languages; current methods in the inservice training of college teachers; methods used in such institutions as Ohio State University, the University of Idaho, and the University of Iowa in training college teachers; and the improvement of college teaching through educational research.

Although the foregoing list of topics is by no means complete, it presents a reasonably broad introduction to the problems faced by higher institutions today in training college teachers. The facts presented in the various chapters of this volume supply clear evidence that institutions recognize the serious nature of the problems which they face and are making vigorous effort to solve them successfully.

WILLIAM S. GRAY

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CHAPTER I

THE PROBLEM OF THE INSTITUTE

FREDERIC WOODWARD

In the absence of President Hutchins, who is on vacation, it is my pleasant privilege to welcome you very cordially to the University and to this Institute for Administrative Officers. We deeply appreciate your acceptance of our invitation; and we feel that your presence here, which represents in many cases, no doubt, the sacrifice of personal comfort, is encouraging evidence of a wide recognition of the importance of the subject we are to consider. In view of the distinguished scholars and administrative officers who are scheduled to address you, I am confident that you will derive rich profit from your attendance, and I hope that in the intervals between our sessions you will find the opportunity for lighter forms of enjoyment. If we can be of any service to you, please feel perfectly free to call upon us.

The subject of our conference is "The Training of College Teachers, Including Their Preliminary Preparation and In-Service Improvement." A few years ago this would have been a novel topic—at least for an institute held by a university whose chief claim to distinction is in the field of graduate study and research. For, as late as in 1927, a Committee on the Professional Training of College Teachers reported that "indifference to the need for such training is all but universal in the graduate schools." Since that time, however, there has been a good deal of effective agitation on the subject. So much agitation, indeed, that one speaker, about a year ago, apologized for undertaking to discuss it further, and declared that he felt that the last word had already been said upon it. This agitation has undoubtedly had a salutary effect. Even the graduate schools, which were reported to be so indifferent three years ago, are no longer disposed to ignore the demand for better teacher-training. At least, the *general administrative offices* of graduate schools recognize it, though there is ample reason to fear that the members of

graduate faculties, in large numbers, are still either unaware of the demand or satisfied that nothing should be done about it.

In our own University, the matter was brought most effectively to the attention of both administrative offices and faculties in the inaugural address of President Hutchins last November. His discussion is doubtless familiar to many of you; but since I stand here in his stead today and since he presented the problem, in my judgment, with remarkable clarity, I wish to read a part of what he said:

The graduate schools of arts, literature, and science are, of course, in large part professional schools. They are producing teachers. A minority of their students become research workers. Yet the training for the doctorate in this country is almost uniformly training in the acquisition of a research technique, terminating in the preparation of a so-called original contribution to knowledge. Whether the rigors of this process exhausts the student's creative powers, or whether the teaching schedule in most colleges give those powers no scope, or whether most teachers are without them is uncertain. What is certain is that most Ph.D.'s become teachers and not productive scholars as well.

Their productivity ends with the dissertation. Under these circumstances the University of Chicago again has a dual obligation; to device the best methods of preparing men for research and creative scholarship and to devise the best methods of preparing men for teaching. Since the present work of graduate students is arranged in the hope that they will become investigators, little modification in it is necessary to train those who plan to become investigators. In the course of time it will doubtless become less rigid and more comprehensive, involving more independence, and fewer courses. But the main problem is a curriculum for the future teacher. No lowering of requirements should be permitted. No one should be allowed to be a candidate for the Ph.D. who would not now be enrolled. In fact the selection of students in the graduate schools on some better basis than graduation from college seems to me one of the next matters the University must discuss. But assuming that this is settled, and assuming that a student who plans to be a teacher has been given a sufficient chance at research to determine his interest in it, his training should fit him as well as may be for his profession. This means, of course, that he must know his field and its relations to the whole body of knowledge. It means, too, that he must be in touch with the most recent and most successful movements in undergraduate education, of which he now learns officially little or nothing. How should he learn about them? Not in my opinion by doing practice teaching upon the helpless undergraduate. Rather he should learn about them through seeing experiments carried on in undergraduate work by the members of the department in which he is studying for his degree, with the advice of the Department of Education. Upon the problem of undergraduate teaching his creative work should be done. Such a system places a new responsibility upon the depart-

ments, that of developing ideas in college education. But it is a responsibility which I am sure they will accept in view of the history and position of the University of Chicago.

This challenging statement has been eagerly accepted by the deans of our graduate schools, as well as by the dean of the colleges; and the director of our School of Education, who has patiently awaited the opportunity, stands ready to contribute the assistance and advice of a staff recently augmented by the appointment of two professors whose special interest lies in the field of higher education. A carefully selected faculty committee, under the chairmanship of Professor Barrows, chairman of the Department of Geography, has been industriously engaged in the collection of information and opinions. We propose to study the problem thoroughly and to proceed as rapidly as thoroughness will permit. We realize that experiments will have to be carried on; that there is no simple and easy solution. I hope we shall heed the president's warning: "In education it is too often forgotten that the essence of experimentation is that final decision is reserved until the experiment is complete. Policies adopted as experiments have a tendency to change into vested rights." We earnestly hope that we shall be able, here, at the University of Chicago, to make a substantial contribution to the sound and effective training of college teachers. But we clearly realize—it should go without saying—that a problem of such complexity and difficulty cannot be solved by any single institution. It will require the best efforts of all who can be interested, and the frequent exchange of ideas and experimental results. Such an exchange is the purpose of this Institute. It is hoped that the discussion will not only stimulate our thinking but will result in a consensus as to some fundamental considerations and, perhaps, as to the first definite steps that should be taken.

In selecting our speakers, we have endeavored to secure not only men who are known to have done constructive thinking on the general problem but representatives of different points of view. And in formulating our program, we have contemplated, first, a consideration of various fundamental aspects of the subject, such as existing deficiencies, the ends to be attained, the nature of the training which is required, and the reorganization of graduate work that is in-

volved; second, an exposition by representatives of certain specific departments, of the particular training essential in those fields; and third, a general summary of methods already employed, together with detailed reports of some of the more important experiments in leading institutions.

In conclusion, I should like to emphasize one or two considerations which I feel must be kept before us throughout our deliberations. In the first place, as I have already indicated, we have yet to convince a large proportion of our constituents, the faculties of our graduate schools, that there are serious deficiencies in our present practices in teacher-training and, especially, that such faults as there are can be corrected without dangerous encroachments on the field of research and training in research. They have not forgotten the struggle which gave to scientific research its rightful place in American universities, and are suspicious of any movement which seems to threaten the security of that position. This is a thoroughly wholesome attitude of mind; and if we are to win the support of our graduate faculties, we must present a program which amply safeguards the dignity and the importance of research in every field.

On the other hand, I believe we shall make a serious mistake if we permit ourselves to be content with merely palliative measures. The object we seek—the improvement of college teaching—is one of fundamental importance. Present conditions are admitted, by everyone who is familiar with them, to be far from satisfactory. They will not be remedied by the hasty introduction of a few new courses or by other gestures of respect. Unprejudiced examination, repeated experimentation, courageous facing of results, and a good deal of patience—all of these will be necessary if our purpose is to be accomplished.

CHAPTER II

DEFICIENCIES IN CURRENT COLLEGE TEACHING

LEON BURR RICHARDSON

The subject assigned to me for discussion is so broad that some limitation must be set upon it if any adequate result is to be attained in the time at my disposal. The term "college" is now used in so inclusive a sense as to embrace not only those institutions whose purpose is the summary training of the student to understand the anatomy and physiology of the automobile but those which, with similar haste, prepare their fortunate graduates to cure all human ills by the imposition of hands. In particular, it now has to do with those collecting and classifying agencies in our great universities the primary purpose of which is to act as sedimentation tanks eventually to reject the portion of the intake of the institution which is unfit and to direct the remainder into the channels afforded by the various other branches of the establishment.

At the risk of appearing provincial, and, perhaps, behind the times, I shall confine my discussion to teaching in the college of liberal arts—an institution long under attack, and perhaps never more so than at the present, but which, nevertheless, shows a vitality that gives it promise of a continued future. The title of my paper implies an attitude of criticism; and to set a college professor at the task of finding fault, with a time limitation imposed upon him, may be regarded as treatment unkind to the speaker, although far from that to his listeners. Under that limitation, however, many of the weaknesses of college instruction which may occur to you cannot be discussed.

It should be said at the start, that, whatever defects we may find in the teacher, the remedies which are available are strictly limited in their application. After all, teaching is not a science but an art. We may utilize principles derived from psychology, from pedagogy, from the sciences of human relations. We shall bring about improvement, but the final result depends upon the base at which we

start. The best instruction cannot make a painter out of an individual who has no mechanical facility for drawing, who has no sense of form and no perception of color. The best school of education, the most learned graduate faculty, cannot make a teacher out of an individual whose perceptions are muddy, whose powers of exposition are feeble, and whose personality is unattractive. That statement is a platitude, but a platitude the essential soundness of which is frequently forgotten by those who are in charge of institutions in which our teachers are trained. Or, if not forgotten, it is, in the routine of the day, shoved so far into the background that the student who is being trained forms the idea that an accumulation of pedagogic credits makes a teacher, that untiring industry and uninspired adherence to directions from above in the solution of some minor problem of research make a scholar. We could solve once for all the problem of teaching by the simple process of selecting those who are to teach—that is, if anyone were wise enough to make the selection, if stringent prohibitions were put in the way even of the consideration of a teaching career by the obviously unfit, and if the financial rewards and the standing in the community of the college professor were such as strongly to attract to that calling those who obviously should teach. If that could be done, our discussion of college teaching might end at this point. However, none of these conditions is likely to be attained; and, as a result, we have and must continue to have in our ranks many who are temperamentally unfitted for the work. Moreover, some of these men and women are permitted to continue in the profession through life—a part of them, conscious of their deficiencies, continually on the watch lest these failings come in some striking fashion to the attention of their college world; a part serenely oblivious of the fact that they are handicapped by any deficiencies at all.

However, such a situation is not new, nor is it one which seems capable of remedy. In general we must take what we can get, and do our best to improve it. We may limit our consideration of the problem, therefore, to that relatively small part of the equipment of the teacher which is more or less under our control. The speaker has no detailed statistical information to impart and even shows his unfitness to address a gathering of this kind by confessing to skep-

ticism of the value of many such inquiries which now constitute an important branch of research in schools of education. This skepticism is based on the fact that as a result of laborious investigation a conclusion is often attained which everyone knew to be true before the research was begun, or, if unexpected results are secured, they are so hedged by exceptions and limitations as to make valid generalization impossible. Quite unhampered, then, by detailed facts, and secure in the belief that his position is safe because such facts are difficult to obtain, the speaker ventures the opinion that the level of college teaching has risen notably in the last seventy years. Probably most of you will agree with that statement; there may be more dissent from the next, namely, that this increase has not come from a proportionate rise in the number of teachers of the highest ability. In fact, it seems to me that in our present colleges there is actually a smaller proportion of teachers whose effect on those under their charge is one of high inspiration than was the case in the earlier days. Even those instructors most highly regarded by students are often looked upon in a different light than were their predecessors; they shine more as brilliant mentalities to be admired than as personal guides to be cherished. On the other hand, there is no question that in the old college teachers of astounding inefficiency were tolerated—men whose abysmal incapacity could find no permanent abiding place in the institution of today. The rise in that minimum of teaching attainment which will secure to the individual the continuance of his job seems to me to be the principal reason for the rise in the general level of instruction; it is not advance, indeed, but an advance in the region of mediocrity.

In the discussion of a few of the specific defects of the college teacher of today I should like to institute a comparison of his outlook with that of the teacher of the older days. From a consideration of the conditions which surrounded the latter, from a glance at his weaknesses and his strength, lessons may be derived which are serviceable today. It has recently been my lot to investigate with some care the documents relating to the history of my own college. Educational institutions of the college type were largely conventionalized in the early days; and conclusions derived from one can,

in general, be applied to all. If, therefore, I mention Dartmouth more often than its relative importance in educational history may seem to warrant, it is because I know it best, and because the situation at that institution was of general significance. I should like, therefore, to call your attention to the Dartmouth faculty during the administration of its most outstanding president of the old days, Nathan Lord, who ruled the college from 1828 to 1863.

During those thirty-five years twenty-four men held the position of professor in the institution. Of that number twenty were graduates of the college itself. For postgraduate training seventeen had attended a theological seminary—fourteen of them a single institution, the Andover Theological Seminary. Six had held active pastorates. Four had had some training in law, and one was a Doctor of Medicine. A number received no graduate instruction whatever; their preparation for their work was limited to the undergraduate course and to that further development which they were able to acquire as a result of their own unaided efforts while serving as tutors in the college or as teachers in the secondary schools. The salary of the professor at the beginning of the period was $700; at the close it had risen to $1,100.

From a modern point of view it is obvious that such a faculty is to be characterized as one of extreme inefficiency. The evil of inbreeding was at its maximum. A breath of outside air in the institution was as carefully guarded against as was the "noxious night air" from the carefully closed bedrooms of the professors. Uniformity of outlook was demanded, and conservatism was the watchword. Theological orthodoxy was indispensable. A stiff and unbending dignity was demanded and attained despite the shocks to which it was often subjected by the necessity of acting as detective and spy to ferret out the crimes of nimble youth. Pedagogical methods were generally stupid, and the time devoted to class exercises was largely wasted. The salaries of these teachers were too small to permit, in most cases, contacts with regions or with men outside their own New England; and although breadth of view so far as it could be attained from books was theirs, the enlargement coming from travel was in general denied them. Stereotyped ideas as to the scope of education were held by all, and the content of the col-

lege course was supposed to have been fixed for all time. Educational experimentation was looked upon with suspicion. Under all these unfavorable circumstances it hardly seems possible that the college could have been successful in its aim or that its training could have reached any high degree of efficiency. It is true that the defects which have been mentioned had their effect, and that the success of the institution suffered from them. No one would recommend a faculty possessed of this point of view or trained in this way for the college of today. Nevertheless, this group of men was regarded by their contemporaries as a strong and able faculty; and their impress upon the two thousand students who came under their influence, as indicated by numberless lines of evidence, was an impress of which Dartmouth or any college of today might well be proud. With all their shortcomings, certain qualities were theirs which made for success. May it not be that the defects of the modern teacher are, in many cases, to be traced to a relative lack of the qualities which constituted the strength of the faculty of former years? Let us see if that idea has any validity.

It may be said, in the first place, that the men of the past generation labored under no doubt as to the real purpose of the college, nor did they have any hesitation as to what the institution was supposed to do. That purpose was exactly the same as the purpose of the liberal college of today, although the means by which it may be attained have changed in the lapse of time. There was no disagreement among these men as to the end toward which their efforts were to be directed; and, as a result, there was thus a unity about the institution which made for strength. As time has passed and colleges have increased in number and in size, as numerous functions unthought of in earlier years have been imposed upon the institution, that singleness of aim has largely disappeared. The teacher of today is not always sure exactly what his work is supposed to be or what may be his aim. Even if he may admit, in theory, the real nature of his task, still his view of his responsibilities is narrow, one in which his relation to the institution as a whole is hardly ever clearly conceived. He has become departmentalized; he regards his function as one independent of that of his colleagues; he deems himself under no responsibility beyond that of attaining

success within his narrow range. The teacher of chemistry is satisfied if his pupils become reasonably conversant with the details of that science; he worries not at all if outside that realm they can be placed only in the ranks of the illiterate. Each department strives in this fashion, with the expectation that as a result of unco-ordinated efforts the outcome of general culture will be secured by the graduates of the college. The teacher is perhaps not entirely responsible for this defect: the present organization by which the duty of general oversight is left to administrative officers—to presidents and deans—gives to the individual teacher a reasonable excuse for feeling that the general interests of the college, the responsibility of synthesis of otherwise unco-ordinated parts, is in the hands of these officers, and that his duty is limited to narrow departmental lines. But whatever may be the cause, it is a defect in our present college organization that many of those to whom instruction is intrusted have but the vaguest idea of what the purpose of the institution really is.

Again, not only was the instructor of the older days aware of the true aim of the college, but he was willing to manage his own task with that aim ever in mind. On our modern faculties we have frequent examples of individuals who are ready to give lip-service to the true ideals of the college, who are even eloquent in their defense, so long as these ideals in no way conflict with their preconceived notions of the proper conduct of their own work. These men, however, when called upon for co-operation in the attainment of some obviously desirable end, oppose with mulelike obstinacy such modification of principle or even of detail in their own special work as may be necessary to bring a desired change into effect. Except for the younger teachers, who have a tendency to approve of change merely because it is change, most of us are ultra-conservative in our outlook and ever suspicious of suggestions for modification. Very seldom are movements for educational unity—movements which look toward the improvement of the processes of the institution as a whole—instituted or suggested by other members of the teaching staff than those who are required by their official positions to take a broader point of view than that of the individual teacher. Very seldom does it happen that such movements do not encounter stren-

uous objections based upon nothing more sound than interference with selfish special interests. It is a defect, therefore, of the modern teacher that co-operation for a unified purpose cannot in all cases be expected even of those who cheerfully admit the validity of the purpose itself.

The teacher of generations past regarded himself as primarily a teacher rather than as an expounder of subjects. His methods were not, on the whole, intelligent; his pedagogical principles were usually unsound; but at any rate he regarded himself as an instrument to activate those who were before him, and not as a mechanism to distribute learning broadcast without regard as to where it should fall. Very few tutors were employed in Dartmouth during the period of which I speak; most of the instruction, even of the lower classes, was in charge of the men of highest academic rank. None of them considered it beneath their dignity to assume charge of the elementary phases of their subjects, or of the more immature of the student groups. It was their job to teach, and that job they accepted without demur. Nowadays many of us regard ourselves as anything but teachers. We are scholars, lecturers, oracles perhaps; but teaching in the true sense we regard as "boy's play rather than as a man's job." When our prestige has grown sufficiently to warrant it, we demand relief from the "drudgery" of elementary instruction, we seize upon the easy task of caring for the needs of students of high mental capacity particularly interested in our specialty, and in our ministrations to them we talk to our hearts' content. Except in relation to necessary accompaniments of large courses, the reading of reports, the grading of examinations, and the like, the application of the term "drudgery" to instruction of any kind is in itself a confession of unfitness. To the true teacher such work is a high adventure, each day presenting a new horizon, each student an independent problem. One to whom such work is drudgery is no teacher at all. None the less, many of us regard that task as beneath our dignity; and others, who in truth really enjoy it, feel compelled to abandon it at the first possible opportunity lest they be branded as "mere teachers" by their colleagues, and, worst of all, by the powers above who regulate the flow of professorial income. So the most exacting task of all in the college is left to those

youthful recruits whose reputations have not yet risen to the point where their wishes need be consulted, and to that courageous band to whom the real pleasure of the work outweighs its professional and economic disadvantages. A defect in college teaching at the present day comes from the fact that some members of our faculties neither by desire nor by capacity are teachers in any real sense at all.

The teachers of former times recognized, as do we, that the object of the college is to develop in those under its charge wide ranges of interest and an intellectual curiosity active in many fields. In order that this result might be attained, they formed the notion that they should be men who themselves were possessed in high measure of those qualities. Their versatility was such as to arouse our astonishment and sometimes our mirth. Whenever financial difficulties arose which made it expedient that a vacant professorship should not for the time be filled, the duties were divided among the other members of the teaching force with no apparent jar. One of my predecessors in the chair of chemistry, having fallen into difficulties with the authorities on account of some deviations from the tenets of Calvin and having been ejected from office as a result, found refuge in the chair of "Evidences of Christianity" in another college, a position which he occupied with entire acceptability for over twenty years. The professorship of intellectual philosophy for some reason was regarded as a particularly desirable seat. Whenever it became vacant, there was much competition among members of the faculty for the privilege of transfer to it; and it apparently made little difference what may have been the subject matter which previously occupied the attention of the candidate. We look upon such a situation as indicating a superficiality of knowledge quite beneath our contempt. No doubt some of these men were superficial, although we must remember that the narrow limits of many fields of knowledge in those days made it more easy than it now is to be genuinely conversant with a broad range of subject matter. But are we with our intensive acquirements really in a superior position? From motives of self-preservation I do not insist that a chemist should be an authority on the evidences of Christianity—but what range of information may reasonably be demanded of him? Other

sciences closely related to his own he should of course know—but what beyond? Should he have some impression of the flow of history, how natural science has contributed to it, and how in turn natural science has been affected by it? Should he have some familiarity with the basic principles of economics, of sociology, of political science, ever to afford him illustrative material to enliven the discussion of his own field? Should he know something of philosophical thought? Enough, at any rate, to show how the philosopher is apt to go astray when he enters the realm of science? Should he possess some measure of aesthetic appreciation, some acquaintance with the masterpieces of literature and of art? In short, should he be a broadly educated man? Of course he cannot be a specialist in diverse realms, but it is my belief that no teacher of science or of any other subject can be really successful in his work unless he has knowledge of and keen interest in a wide range of subjects seemingly remote from his own. The concept of the unity of knowledge is the task of the college to inculcate. The undergraduate course is the only part of our educational system where that task can be done. Knowledge by itself is of little account except to the specialist; knowledge in its relationship to diverse fields is a resource beyond price to anyone. But how can such a result be brought about by teachers whose vision, keen as it may be, extends little beyond the confines of their specialties, who not only are indifferent to most of that which lies beyond but are sometimes contemptuous of it? Such men are fairly common among the recruits to our faculties from the graduate schools. Most of them learn better in time, but some never do. And so a further defect in college teaching is that in some cases the education which we try to impart is the responsibility of men who themselves are in no true sense educated.

It could hardly be expected that the teachers of the older generation would be productive scholars in the modern sense. It is probably true that they did not, with bated breath and upward lifted eyes, fall prostrate at the holy name of research. Yet they were not, after all, entirely without claim to initiative and originality along productive lines. In the early Dartmouth days one of the professors of Greek was among the most eminent of American grammarians, with ten or twelve books to his credit. Curiously enough, his suc-

cessor, a far better teacher and an equally profound scholar, never thought it necessary to publish anything at all. The president of the institution was a voluminous and original contributor to the controversies centering around a long-forgotten theology, and no one questioned his scholarly eminence. A professor of Latin was in much demand for addresses in all the region around, and these productions were based on a breadth of reading hardly to be rivaled today. A professor of philosophy was equally in demand as a speaker, and discussed, in productions which even today are not without some measure of value, the religious, educational, and political questions of his time. A professor of rhetoric was the author of a scholarly biography. A student trained by these men, and coming to the chair of natural philosophy just after the close of the period, took a recognized place among the most eminent astronomers of his time. Of the rest, no evidence of scholarly productivity survives. The record of this faculty seems meager if judged by the standards of today. But one thing can be said of it: such work as was done was carried out because the teacher honestly wished to do it and not because of a necessity of appearing in print in order to hold his job, in order to obtain advancement, or in order to receive calls to more wealthy institutions. Investigations undertaken, as these were, because the investigator is relentlessly driven to the problem by his own desire to know the answer are likely to be fruitful, whatever may be the outcome; investigations undertaken for the ulterior motive of personal advancement, however brilliant may be the result, do not always contribute much to the real effectiveness of the teacher. According to the dictum that no man is a real teacher unless actively engaged in research, the members of the old faculty would be beyond the pale. But placed in a present-day environment, under modern conditions, but with their scholastic point of view unchanged, I would match them against the teaching forces of most of our modern colleges. No one would dispute the assertion that high teaching ability coupled with efficiency in research makes for maximum effectiveness, but to substitute skill in investigation for interest in teaching leads only to failure. Another of the defects in college teaching for which the teacher is not always re-

sponsible is the substitution of virtual compulsion for individual initiative in the matter of research.

Up to this point certain defects in modern college teaching have been illustrated by comparison with a period in which those defects were not of such common occurrence. There are defects, however, which are common to all times. I suppose that the most frequent complaint of students against their instructors has always been that of dulness, and that the most acceptable of all teachers is the one who has the art of keeping the interest of his hearers awake at all times. It is dangerous, however, to draw hard and fast conclusions concerning the merit of the teacher from this factor of his work alone. The attitude of the undergraduate who stolidly places himself before his instructor with the tacit demand that his interest shall be aroused and maintained and that the instructor must do it all is not one for which any sympathy may justly be felt. In all subjects there are phases, highly important in their aspects, which require such close and concentrated attention as to be irksome to the student if he is of the type to whom laborious mental activity is unpleasant. The teacher who is regarded by his students as always interesting, never dull, is somewhat open to suspicion. It is possible that he merits all the encomiums heaped upon him, but he is extremely likely to be a superficial individual who avoids difficult things merely because they are difficult and who concentrates upon the easy and obvious because that is the road to popularity. Bearing in mind, however, the caution against the type of teacher who is merely superficial, it is nevertheless true that the greatest defect in college teaching is dulness. There is abundant reason why this should be true. The human race in general is dull when it assumes the position of the expositor; and in the teacher, who shares with the clergy a life-work of exposition, this entirely human characteristic has its best chance for expression. It seems to me that the greatest problem of the teacher—one which he needs to study from his earliest years to the end of his course—is a conscious avoidance of dulness, without in the process lapsing into superficiality. And it also seems to me that the most effective way in which that can be done is through alertness, energy, animation, and force in the work of the day. I have known, indeed, teachers of unvarying calmness

and even poise who were effective, but I have not known many of them. In general, if a teacher does not believe that the subject which he is trying to impart is entirely worth while, if he does not feel a compelling urge to exert all his energy to convince his students of that fact, if in his every move he does not show that to him, at least, the matter under discussion is of the highest interest, if he gives the impression that his own evident dulness comes from the subject which he is endeavoring to impart, his effectiveness will not be great. Curiously enough, however, teaching is the only profession extant in which dulness may be looked upon as something of an asset, not in its effect upon the students, but upon others engaged in similar work. In no other calling is pompous dulness so likely to be regarded as prima facie evidence of scholastic profundity. The teacher who is a solemn ass sometimes is highly successful in concealing his real asininity behind the thick fog of solemnity. Nevertheless, despite the advantage sometimes offered by dulness from a material point of view, it must be reckoned as a defect in the teacher if he does not make all possible efforts to overcome that measure of it which may be his by natural gifts.

When all is said and done, probably the greatest defect which a teacher can have—and which unfortunately many do have—is a lack of interest and enthusiasm for the work itself. If an individual regards undergraduate teaching as merely a necessary evil to be endured in order that he may gain the opportunity of scholarly productivity; if he dislikes to deal with students who are not of the first rank in mental capacity; if he is unable to grasp the wide variations of human intelligence characteristic even of those of college caliber; if he regards the institution as a pleasant place were it not for the presence in it of college students; if he is cynical concerning his own work and that of his colleagues, with a smart cynicism that savors of bitterness—then, in whatever respect his greatness may lie, he is assuredly not a great teacher—probably he is not even a passable one. To the true teacher his work is a never ending adventure, a problem of ever renewed interest. He may go on from year to year in what may seem a monotonous course, perhaps always dealing with the same minute subdivision of his chosen subject. If he regards the material taught as the thing of prime importance, he

will become indifferent, stale, a man of routine. But to the true teacher every class presents a fresh problem, every man in it a new and interesting study. Instead, therefore, of being engulfed in the steady flow of routine, he is at all times animated by the novel aspects of what may seem to be an old situation. Subjects may remain for a time relatively static, although they too gradually are subject to change; but students are never alike. The teacher may complain of his lot, as men of all callings are wont to do; he may sadly reflect upon his relative unimportance which makes no political party place him on a parity with the farmer in the need of "relief" or of the manufacturer in the need of "protection"; he may realize the truth that, despite presidential *pronunciamentos* to the contrary, teaching ability in itself will advance him but slowly, and will almost never attract to him favorable attention from executives of institutions other than that in which he is employed. Nevertheless, if he is a true teacher, despite all these handicaps and limitations, teaching is the one thing which he is content to do; it is the one calling which will satisfy the demands of his soul. It is a defect of our system of today, a defect for which the teacher himself is little responsible in many cases, that real teaching ability and enthusiasm are so little valued by those who have our institutions in charge. It is a defect that many instructors who have little real interest in teaching are, in the minds of these executives, placed so high.

Other defects in the attitude of teachers might be mentioned if time permitted. Thus we have the sour cynic who condemns everything about the college until practical remedies are proposed to relieve some difficulty, and who then vigorously opposes any modification for reasons which can only be deemed carping and hypercritical. There is the unbalanced optimist who favors any change because it is a change. There is the indolent man who finds the security afforded by academic tenure a secure retreat in which to cherish his laziness. There are many other defects which cannot be dwelt upon here. But I think it will be acknowledged that if the defects which I have treated in some detail are avoided; if an individual understands the purpose of the college and is willing to plan his own work to conform to it; if he regards himself as a teacher of men rather than an expounder of subjects; if he himself is a man

of broad interests and wide intellectual range; if his ventures into the realm of scholarship are due to his own motive power and not through an impulse from above; if he is alert, energetic, a compeller of interest; if, above all things, he loves to teach—then, if these qualities are superimposed upon an average natural capacity for instruction, he will be a success. Any college which can build up a faculty of men of this type need concern itself little as to its efficiency. The defect of present-day teaching is that such men are too few.

If this production has seemed somewhat critical in tone, the fault must be attributed to those who planned this Institute rather than to me. I did not select the subject. I was told to discuss "defects" in college teaching; and that, to the best of my ability, I have done. From what I have said, it should not be inferred, however, that I regard college teaching as in a retrograde or decadent state. Despite my comparison, for purposes of illustration, of specific points of old colleges with the new, it is my view that teaching, on the whole, is better than ever before. We have even reached the point at which in some cases the executives of our largest and most influential universities really mean what they say in the announcement, common to them all, that teaching ability is regarded as a high qualification for academic advancement. The average teaching level is probably higher in these stronger institutions than it is in the small and sometimes impecunious colleges. Nevertheless, some of our best teachers are found in places of the latter sort. I have sometimes played with the idea of collecting, by careful selection, a faculty of these men, most of whom have no chance of academic transfer, and who labor cheerfully and uncomplainingly, and with high effectiveness, in these underpaid positions. Unless they attain prominence in research, no one ever hears of them outside the college itself, although there they are in high repute. Probably it would be said that such a faculty would lack scholastic distinction. Perhaps it would, but I should be willing to stake much upon its effectiveness in the training of college undergraduates. So, in conclusion I would suggest to any executive who may not be confident in all respects of the teaching efficiency of his present faculty, that this untried and promising method of recruiting his staff is open before him.

CHAPTER III

ACADEMIC AND PROFESSIONAL ELEMENTS IN THE TRAINING OF PROSPECTIVE COLLEGE TEACHERS

HENRY SUZZALLO

In thinking of the prospective college teachers of America, we must keep in mind two fundamental facts: first, all the varying types of organization under which teaching for the purposes of liberal education is conducted, including the large university colleges at one extreme, where the teaching staff is large, specialized, and well equipped, and the very small, independent liberal arts college at the other extreme, where the teaching staff is not numerous, the equipment scant, and the teaching assignments cover several branches of a single scholarly field; and second, the changing nature of the professional career of most doctors of philosophy, who must begin, for the most part, in small colleges, where duties are spread over wide ground, and end, if they are successful, in the more specialized duties of advanced scholarship and teaching.

Today the graduate school is guided by the ultimate, rather than the immediate, duties of teachers in large university colleges, instead of by those of beginners in small independent schools of liberal arts. Academically and professionally, the products of graduate schools are usually too narrowly trained. The program should be broadened.

A. THE ACADEMIC ELEMENTS

For the prospective college teacher academic scholarship is an absolutely essential requirement. It is the foundation of both teaching ability and the power of competent investigation or inquiry of scientific worth. But scholarship for both teaching and research has, I fear, been too narrowly conceived. Breadth of scholarship has been sacrificed for intensity in the last two or three decades, ever since the methods of the graduate school became dominant in the liberal arts colleges. This has been a growing tendency or drift since the eighteen-eighties.

The first requirement of any teaching scholar is that he should be a civilized or cultured man in his intellectual understandings and appreciations. Too many college teachers are not. They comprehend a part of civilization masterfully, but they are too often ignorant of the rest. Their intellectual acquisition is patterned after the structure of an obelisk, when it should be constructed on the lines of a pyramid. They have specialized on near ignorance instead of on broad knowledge.

The small college of the nineteenth century with its old-time professors provided this breadth of understanding within the full range of the academic knowledge then available. Since then we have vastly added to our organized knowledge of the world, natural and institutional, in which we live. To the old humanities and mathematics, we have added the natural and the social sciences, the modern languages, literature, and the fine arts. But in making the additions we have failed to cover the ground as a whole. Swamped with the details of accumulated knowledge, we have excused students from their obligations even though we have lengthened schooling, taking refuge in administrative regulations that permitted many varieties of election in studies, often as much a device for avoidance as for selection.

Then and there we needed more comprehensive and less detailed and specialized courses. These would have met the Freshman mind better, kept study more vital, and given a view of civilization or culture as a whole. But that step had to wait on time, time needed to aggravate a problem sufficiently to attract attention. This is but another way of saying that things have to grow worse before they can grow better.

Meanwhile students built up a college activity and life outside the classroom calculated to serve the interests they felt to be vital. Meanwhile a changing world and an ever enlarging scholarship and science magnified organized knowledge—and recourse to elections seemed more necessary than ever before. The respectable specialization of the graduate school kept creeping down into undergraduate college teaching, college curricula, and college studies, so that the liberal function was being moved lower and lower down in the

school system, until, in fact if not in theory, it has been pushed down into the junior college or lower division and we are beginning to think of it as part of secondary education. Everything from the Junior year up is specialized; in many places from the Sophomore year up; in some places from the Freshman year up; and in a few places, because of peculiarly differentiated entrance requirements for admission to different colleges, the junior-college work looks like a specialization to which commitment has been made somewhere in the high-school career. Taking the varied picture of our country as a whole, this is not an unfair description of American academic specialization.

Specialization was the natural result when genuine control of the curriculum passed from a small and varied faculty acting as a whole to departments of teachers with a single interest. The general faculty consent became one of passive consent, especially when the new graduate schools filled it with narrowly specialized men who had, in self-defense, to be tolerant even if they could not be appreciative of each other.

I maintain that the scholar must first have a liberal education and really be a civilized man before he can become a professional scholar and college teacher. We may assume that part of the revolt expressed in the lower division or junior-college movement, in the trend toward comprehensive courses, in the requirement of a junior certificate, are all more or less intuitive gropings toward a genuine liberal education completed before specialization begins in the Junior year of college.

The second requirement of a teaching scholar is that he should have a more than ordinary mastery of that field or group of related subjects within which his highest mastery is ultimately to fall. As our present trends indicate, this would seem to be the business of the senior college or upper division. The student should not be allowed to elect a departmentalized subject major but a group or field major, such as languages and literature, physical science, biological science, social science, or fine arts.

There is a most promising movement in this direction. Stanford University, the University of Oregon, George Washington University, and others move back from the evils of close specialization to

join hands with certain eminently conservative colleges which never lost faith in divisional organization or never ignored the need to know a single subject in the light of its academic relatives.

If teaching motives have contributed to a saner view than that usually current, so have motives operating for more effective research. Research operations move from a basis largely individualistic toward co-operative group research. A company of scholars, each representing a particular and specialized approach, work on a common problem. The discovery of insulin is a tribute to this type of academic research, and a dramatic argument for the importance of keeping allied subjects related not only in a group of minds but in each scholar's mind, at least appreciatively.

The institutes of social science at the University of Chicago, of human relations at Yale, of law at Johns Hopkins, are further illustrations of permanent organizations for co-operative thinking by scholars. Unfortunately these organizations lie outside the teaching set-up of the universities, as extra-academic institutes appended to the University. They will have an inevitable and good effect on teaching in the classroom, though not designed for this purpose. The University of Wisconsin proposes to bring this institute organization of related subjects over from the rim of research to the center of teaching, and to place this institute or division halfway between the general faculty of the college, now grown too large, and the departmental faculty, now grown too specialized. The focus of both teaching and research would thus be in the institute or division. Some universities which have maintained divisions akin to this new institute type of co-operation will not need to make much change in structure, though they will, in most cases, need to change their spirit of operation.

A broad culture, as broad as civilization, would give a needed appreciation of life and knowledge as a whole, fostering beginning interests and masteries. Then field specialization, as opposed to subject specialization, ought to add sufficient appreciation and mastery to give that high critical power which is the product of knowing, more than ordinarily well, all the subjects that are neighbors to one's specialty.

The third academic requirement of any teaching scholar is that

he be master of some one subject or part of a subject. This is essentially the task of a genuine graduate school. It is its traditional purpose. It is tenacious and not likely to be given over, save as the graduate school tends to be flooded with people who have no intent to be master scholars or college teachers and have other respectable uses for further study not coincident with this. I need not discuss it further.

Now while these three academic requirements, implying more and more knowledge, independent intellectual power, and command of scholarly tools, etc., as one proceeds from the first year of study to the last, have not been adequately met either in the graduate school or the senior college or the junior college below it, there is observable an experimental trend which is moving in the desired direction. Meanwhile there must be a transition policy, one that will serve until the product that enters the true graduate school is more satisfactory.

That transition policy would make the junior college a level on which the students' view of civilization as a whole is made adequate. It should be a period of repairs, with specific courses covering vacuities in the students' secondary-school preparation, and of enlarged view and synthesis, with comprehensive courses providing interrelations, larger generalizations, and critical appraisals. The students' program will be arranged on the basis of individual diagnosis and individual need rather than by arbitrary faculty regulations for the whole group. This period should reveal to the student the particular group of related subjects which constitutes his first concentration in the senior college if he is to continue his intellectual schooling in some aspect of academic or professional training.

Obviously, the senior college which is to receive such students will require reorganization. The division representing a group of related subjects, academic or professional, will supplant the department, representing a single subject, as the dominant unit for student control and management. Such groupings as languages and literatures (letters), physical sciences, biological sciences, social sciences, fine arts, and pre-professional groupings will be characteristic. This type of control should extend from the present Junior year through the non-research training levels of the postgraduate

period, and may well cover or include the degree of Master of Arts. This expanded period of the senior colleges or divisions should be reorganized to permit increased independent study on the part of the student, the method used being dependent on the situation in each institution. Where high selection of students is possible, as in many schools of private foundation, provision should be made for independent study, throughout the whole of the student's program, for enlarging numbers of students. Where such high selection is not possible, as in state universities or small colleges whose finances are not adequate, the two-way plan for registering for specific courses, either in class study or independent study, should be provided.

The work for the Master's degree, at least the last year, should reveal to the student whether his bent is primarily professional or scientific and scholarly, and also what particular subject in his field is to be the focus of postgraduate specialization if he is to continue university study. It will reveal whether the doctorate he pursues is to be in research, the doctorate in philosophy, or in some professionalized aspect, as in the case of the doctorate in education, business, fine arts, etc.

In this senior-college period much of the existing machinery of administration may be kept. In the training of research scholars, in the true graduate school which follows, most of it should be abolished.

Such specialized professional training of scientific investigators in the arts, sciences, and professional subjects should constitute an apprenticeship of fellow to master scholar. The chief responsibility for admission to this type of work, the supervision and direction of the same, judgment as to the adequacy of the doctoral dissertation, and the candidate's preparation for the final examination should rest on the scholar to whom he is apprenticed. It is assumed that only demonstrated research scholars with capacity to direct such students should be assigned to the small faculty constituting the directing staff of the professional school for research scholars. The final examination should be in the hands of a committee of three, two in addition to the supervising research professor, and should be open to other professors who wish to attend.

A common policy is best reached by frequent discussions of re-

search policies and methods on the part of directing professors. Such common flexible agreement should supplant fixed regulations voted upon by general faculties, not all of whom are competent or interested in research.

The foregoing does not apply to other groups of students on the postgraduate level who are studying for purposes other than that of specializing in research.

B. THE PROFESSIONAL ELEMENTS

If proper academic training is thus provided for the college and university teacher, what elements of professional training are required?

The first professional requirement is that the student should be prepared for membership in the American educational profession. This would be covered by a fundamental introductory course on the "American Educational System," studied as an institutional instrumentality of our civilization. The college would be focal in the course. Such a treatment would cover both the traditional and the scientific elements in the school system's status and operation. It should be understood both historically and comparatively, in terms of the conditioning and purposive factors both external and internal. A course for a single semester would suffice for advanced students on the postgraduate level.

The social and educational outlook of college teachers trained in the postgraduate school is now too restricted. They do not have that needed understanding of the changing college in which they are to teach. Neither do they have an adequate comprehension of the secondary-school system from which their students come. They are lacking in intellectual capacity to co-operate with their educational associates on their own levels or on those above or below them. This is particularly true in a period of rapidly changing life and schooling.

The second professional requirement is that the prospective college teacher have some knowledge of the psychology of learning and teaching as related to the subject matter of his special academic field or subject. The common techniques of college instruction should be analyzed and appraised. This could be provided in a four-

or five-hour semester course, and should follow the introductory course already mentioned.

The third professional requirement is that the prospective college teacher have some directed or supervised experience in the actual handling of college students, preferably junior-college students. Our present system of assistantships could be modified to serve this purpose. But this first experience in teaching should be more than an unassisted trial-and-error method of learning to teach. Some older successful teacher or some specialized director should be watchful of this first apprenticeship in teaching, giving encouragement, criticism, and constructive suggestion. At least one semester of this type of assistant-teaching should be provided.

Taken as a whole, these three professional requisites are a scant requirement that will not take much time from the graduate program of academic study. It is a good foundation with which to start. After-training during first employment will thus have something upon which to build. Such apprentice teaching will save many young scholars from failure as teachers—a fact now too common.

In brief, then, we have called for better academic training on three levels, the second and third of which become successively more restricted, more specialized, more intense, with independent study increasingly emphasized along with a highly detailed mastery of both facts and the scientific technique involved in the discovery of the same. We have also called for some preparatory professional training covering three aspects: (1) an understanding of the institutional character of education as a whole and the college in particular; (2) a theoretic comprehension of the basic psychology involved in teaching and learning by the methods current in colleges and universities; and (3) some preliminary and experimental contact with the intellectual handling of junior-college students under experienced and skilled direction. It will be far easier to provide the professional training indicated than to achieve the suggested reconstruction of academic training. The former requires a mere addition of activities on the graduate level; the latter calls for a radical reconstruction of the programs of study in both secondary schools and colleges.

CHAPTER IV

DESIRABLE TYPES OF GRADUATE TRAINING FOR PROSPECTIVE COLLEGE TEACHERS

LEON BURR RICHARDSON

In my paper of this morning I set forth what seem to me some of the defects of the modern college teacher, and in doing so I endeavored to emphasize by contrast those qualities in him which make for success. In brief, it was my contention that the college instructor should be an individual fully in sympathy with the purpose of the institution; that he should be willing to direct his own work and subordinate his own special interests to conform to that aim; that he should regard his job in life as primarily that of the teacher; that he should himself possess the wide range of interest which it is the purpose of the college to encourage its students to form; that his productivity as a scholar should spring from his own desire to know and not from external pressure; that his attitude should be one of alertness, energy, and animation with the avoidance of dulness; and that, above all things, he should love to teach. Those were the points which I especially mentioned, but in addition it goes without saying that he should be thoroughly conversant with the special subject which his duty calls him to teach.

In the old days, as I have said, the prospective teacher either was self-taught or was a graduate of the school of theology. No one, I suppose, would recommend either of these methods as a suitable preparation for the college teacher of today, although, perhaps, for the teacher of the olden time the theological course was not so ineffective a preparation as we sometimes think. With the growth of learning and the advent of higher requirements, American students began to seek the German universities to meet the new demands. They brought back with them a specialized type of scholarship little known before, and, with it, sometimes a real, sometimes an apparent, superiority, highly prized by the possessor and regarded by his colleagues who were not thus trained with some measure of awe.

So when we began to develop graduate instruction of our own, there was little question concerning the model which should be followed, and not much study of the proper articulation of the new institution with the old. A graduate school modeled upon the German educational theory was grafted upon the college, which was mainly English in its origin and spirit; and the arrangement was made to fit despite certain incongruities in the parts thus welded together. As a result we have now reached the point at which training for college teaching must generally follow the closely marked path set by a graduate school based upon the German ideal.

Criticism of this institution is perhaps accepted with less patience than that of any other portion of our educational system. There is some excuse for that attitude in the fact that such criticism is often ill-founded. In other cases, in which more basis for complaint exists, the attack goes to such extremes as largely to defeat its own ends. Nevertheless, it remains true that even measured and well-considered criticism of the essential theory and of the operation of the graduate school is received with a degree of impatience and touchiness that is not exhibited by those in charge of other branches of our educational system. Just as the extreme advocate of our present prohibitory system is likely to regard all who look with some doubt upon its efficiency as bad men, desirous of achieving immoral ends; so some of those who have our graduate schools in charge seem to look upon those who question the entire soundness of the system as individuals desirous of bringing all true scholarship into contempt. Therefore, he who thus ventures to criticize the school as it is must reconcile himself to the fact that his motives are sure to be questioned and his competency subjected to attack.

Moreover, there is much that is good to be said of the school. The individual who passes its courses and who receives its highest honors is fairly sure to be competent in his command of the subject matter of his specialty. It may be that his information has been acquired without enthusiasm, as a means to an end; it may be that he is learned along narrow lines; it may be that his range of general information and interest is lamentably deficient but that so far as his specialty goes he is thoroughly conversant with it. Upon receiving his degree he probably knows more about his chosen field than

he ever will again. It is no small matter for colleges to be able to rely upon this warrant of specialized knowledge. The teacher of former days was not so likely to be deficient in this respect as we sometimes think; but it was nevertheless possible—and in fact it often happened—that individuals utterly lacking in their actual knowledge wormed their way into college faculties and retained their position there for life, highly to the detriment of the institutions which they were supposed to serve. That this situation is no longer so common as it used to be, should be placed to the credit of the graduate schools. The general elevation in the level of college instruction is to be ascribed to that cause.

Nevertheless, an examination of the theory of these schools as the training ground for college teachers leaves us with a sense that there is something about that training which is incomplete. In essence they are institutions whose primary purpose is the advance of human knowledge—seats where productive scholarship may have free play. That is a noble aim and one which should be encouraged in every practicable way. But as a matter of fact, these institutions, in practice, serve mainly as training schools for college teachers. The majority of their students have almost exclusively in mind the aim of preparing themselves for that occupation and of securing positions as a result of their training. To that extent the institution is really a specialized professional school. So far as I know, it is the only type of professional school in existence which centers its attention solely upon one factor in the training of the student to the exclusion of all others. Of course, if the assumption is made—and it frequently is—that anyone who knows is thereby a competent teacher, there is no point to the objection just raised; but no one who observes college teaching critically is likely to fall into that error. Even the one aim of the school, scholarship in the productive sense, is not always in any real degree attained. Too often we observe the freshly pledged Doctor of Philosophy who has laboriously compiled his thesis, passed his examination, and received his degree, rejoicing in the jubilant resolution that never again will he voluntarily subject himself to the performance of such a task. The degree and the job to be secured as a result of it are the sole ends which he has had in mind. But if we assume that the true scholarly point of view is real-

ly attained, what are the deficiencies which may be observed in graduate-school training as it exists?

I should reckon as the first of them the character of the students which the institution attracts. Of course we find in every such school a splendid group of men and women, thoroughly alert, thoroughly enthusiastic, alive to the possibilities of the problems upon which they are engaged, themselves active contributors to the solution of them. Such men and women profit by any institution of higher instruction, however conducted; they need mainly to be given opportunity to work under competent advice, and then to be left alone. But as I have observed undergraduate students who are looking toward advanced degrees and those who are already engaged in the work of the school, I have been impressed by the number among them who, with almost painful industry, perform meticulously all assigned tasks; who work endlessly in the attainment of a prescribed end; who devote all the intelligence with which they are endowed to the solution of the problems before them; but who, nevertheless, are hopelessly uninspired, hopelessly plodding in their mental processes, hopelessly immune to any real inspiration. The worst of them are, of course, detected early in their course by graduate faculties and deflected from their purpose; but many go on and, by dint of industry, patience, and uncomplaining good humor, attain results which really are highly creditable, considering what these men are. They make good research workers in matters of routine; they may even achieve independent results in restricted fields; but as teachers they so lack the fundamental characteristics of native capacity for the calling that they will never arise above a low level of mediocrity. Our faculties are composed of too many recruits from such men and women.

On the other hand, it is the testimony of those who endeavor to interest in the career of the college teacher those undergraduates who give promise of the qualities required for that work that the character of the training required for the position often acts as a most powerful deterrent. It is not that teaching fails to appeal to them as a profession: they express themselves as attracted by it. It is not that they are repelled by the labor involved in preparation, for their industry is beyond question. It is rather that they look at

the future with a clearness of vision that is rather disconcerting. They see the course prescribed for them for the three or more years to come as essentially narrow and unattractive; they fear to lose by it some of the range of vision and wideness of interest which they regard as the goal for their intellectual life.

Intensity along narrow lines—is that really the best preparation for the teacher of undergraduate students? Is it essential that such a teacher "should have made some contribution to the advance of human knowledge"? Is the life which is required by the graduate-school course the life which is most advantageous for the embryo teacher? The steady accumulation of knowledge is good, if it is basic, fundamental knowledge, acquired for itself alone. But is it of much value if laboriously stored away for the test of an examination? How many members of the graduate faculties can pass the examinations which they themselves set, beyond that part of it relating to their own particular field? How much of that which they once amassed as they approached their own doctorate have they since rejected as excess baggage, readily to be obtained from books if the necessity arises? Perhaps it is well for an individual to have amassed at some one time a great body of facts, later to be forgotten—but is time spent for that purpose the best use of the period of training for college teaching? Examinations to test that competence of the individual we must have—but does our present system overemphasize the control of detailed fact and sometimes fail to give us information as to the mastery by the student of the broad general principles of his chosen subject, of his command over the relationship of knowledge, of his ability to use for himself in an independent way that which he has acquired? No doubt, examinations of the proper type are given and, so far as they conform to these requirements, are fit and satisfactory tests; but I have seen many which have no claim to be more than tests of the remembrance by the student of a great mass of unrelated facts. There is no question that he who is preparing for the career of a college teacher should be given the opportunity to engage in some problem of research. But is it necessary or desirable that he should be obliged to produce results of a positive character? Suppose someone publishes similar material ahead of him. Does that in any real way les-

sen his credit, and should it deprive him of the end for which he strove? Is there any reason why he should be compelled to publish, often at an expense he can ill afford, material which is not regarded as worthy of publication through the regular channels? Does the mere fact of publication make him a better teacher? How far are the requirements for the Doctor's degree dictated by the desire of the university to make an impressive showing in relation to its competitors, and how far are they designed for the real interest of the student himself? These questions admit of various answers, but not in all cases are the answers those which are entirely satisfactory when we regard the graduate school as a training ground for college teachers.

A most serious question has to do with the way in which the student passes his time during these preparatory years. It would seem reasonable that the period should be one of mental enlargement, of contacts with diverse lines of thought, of sufficient leisure to pursue varied intellectual interests and hobbies which the individual may have formed. As a matter of fact, it is generally the period of most intense specialized activity which the student experiences during his entire life. All his thoughts are centered on one definite end. I have never observed such concentrated work, extended through unreasonably long hours of the day and night, as was carried on by the students of chemistry in the graduate schools with which at one time I was familiar. I presume that statement is equally true of those who were pursuing other subjects. There was little or no opportunity for outside activities; association was largely confined to other students with the same interests; and conversation, beyond the ordinary play of banter, was very largely devoted to the subject matter of that particular specialty. It may be true that such intense application is necessary to attain the desired end, but I am not at all sure that better teachers of chemistry were produced by that method than by one in which less concentrated attention is paid to science and more to matters of general intellectual import. In the hurry and bustle of the day, leisurely living, meditation, and synthesis were quite impossible. The pace was maintained because it was the necessary pace of the group; but even then, while following

it, there seemed to me to be notable and avoidable deficiencies in the equipment for college teaching which that group was receiving.

It might be thought that actual teaching experience would be considered highly desirable as a part of the graduate-school course. It is true that positions as assistants in the routine of the university are available and that the more impecunious of the students are glad to supplement other income by work of this character. Often these positions do offer opportunities for valuable experience with undergraduates; but in some cases, such as those of readers, there is little of importance beyond the financial remuneration to be gained from them. Curious as it may seem, however, such positions are not regarded officially as contributing toward the preparation of the graduate student for his future calling. In fact, time thus spent is in no way effective toward the attainment of the end which the student sets for himself in the university: he must devote a longer period to his preparation if time is to be taken from what is considered real graduate work for the performance of the tasks of teaching. Any advantage which may be gained by the student is thus merely incidental, and is a result of his poverty, which places him more or less at the mercy of the institution as a cheaply paid laborer. The graduate school can hardly claim it as an asset in its work.

Most serious as a defect in graduate training is the loss of a sense of proportion often experienced by those who are subject to its ministrations. That result is quite natural from the intensive character of its work. I am not among those who would cast ridicule, as is often done, upon the subjects of many of the doctors' theses which come from our universities. In general these titles seem absurd only to those whose limited range of knowledge and intellectual sympathies make them incompetent to judge. Any knowledge is worth while, although not always worth the dignity of print. Therefore, if an individual struggles through two laborious years to solve some minor point in the internal economy of the earthworm, I am ready with congratulations, although my personal interest in earthworms is of the slightest. But no man can work so long and so intently without the tendency coming upon him to magnify his subject, without earthworms rising in his estimation to the status of pythons, without their pre-empting in his mind a position far beyond their

true deserts. As long as he is intent upon a particular problem, perhaps his high estimate of its importance is an asset, for few men do well a thing regarded by them as insignificant in its bearings. But when he comes into the world with his discovery, when he attempts to impose his view of earthworms upon thinking or unthinking men, and particularly upon a class of college undergraduates, his point of view is likely to prove a handicap to his effectiveness. After all, earthworms are earthworms, and will so remain despite all we may learn about them. The failure to preserve a proper sense of proportion is the most serious defect to be encountered in those who have just emerged from the graduate schools. It is least evident in the brilliant man with a sense of humor. His balance prevents him from forming an overestimate of the importance of his efforts, and a sense of humor is but another name for an acute perception of proportion or the lack of it. It is at its worst in the earnest, laborious, uninspired individual, who becomes goggle-eyed when the name "research" is mentioned and who assumes an attitude of reverence toward his own work as a matter of protection to veil his consciousness of his own insignificance. But in whatever form it is exhibited, such a failure is almost fatal to success in the work of college teaching. Until it is overcome—and it usually is in some measure in the lapse of time—such a mentally warped individual is generally more of a liability than an asset to the college which he serves.

Other defects of the graduate school might be recounted did time permit. They have long been recognized, and in recent years the institution has been under serious attack. I do not see, however, that these attacks have had any particular result, that the authorities of the school have much modified their methods as a result of them, or that college executives who express their impatience with the system have in most cases become eager to substitute other requirements in candidates for their faculties than the possession of the Doctor's degree. In fact, progress in the only direction for modification which seems to be much mooted at the present time would in my mind make the situation considerably worse. I refer to the imposition upon college teachers of requirement for work in education.

I am not of the number of those who are contemptuous of schools

of teaching or of departments of education in our colleges and universities. Very frequently teachers of such subjects are regarded with little consideration by their colleagues of other departments, and schools of teaching are looked upon with some measure of contempt by the other graduate branches of the university. There is little reason for this scornful frame of mind. It is true that efficiency in teaching comes, in the main, from the innate qualities of the teacher; but nevertheless, even those best fitted for the work can learn much from those of experience in its activities. It is true that the professors of education have developed a technical jargon which means little to those not accustomed to it, and is regarded by them with some amusement; but every field of knowledge has a jargon of its own. It is also true that extremists in the departments of pedagogy carry their claims for the efficiency of their processes far beyond the bounds of reason, but again that is a habit not uncommon in any field. My objection is not to the work itself, if conducted by men who combine enthusiasm with a good sense, but to the method by which such work is imposed upon the student who is subject to its influence. It seems to me that one of the great faults of our educational structure is the system of credits to which we have become so slavishly attached. We seem to do nothing in all stages of our training without assigning to the individual who has barely met our standards credits, points, grades, for the accomplishment of the work. These points are placed at the credit of the individual on the books of the institution very much as money is placed to his account in the bank, with the difference only that he may draw upon them indefinitely without exhausting the store. The result is that the student regards his progress in terms of points. If he accumulates one hundred of the hundred twenty required for a college degree, he regards himself as five-sixths educated and has statistical evidence to prove it. I have never found anyone who was willing to defend the theoretical basis of this system; but aside from the attempts of a few institutions to instal comprehensive examinations as a requirement for the degree, with the purpose of discovering whether or not the student really knows anything, nothing is done to remedy the situation.

The system of credits seems at its worst in the field of education.

Under the control of a centralizing authority with legal powers for enforcing its decrees, standards based on these credits are adopted in most of our states which must be met before a candidate for a position in the public schools has any possibility of success. Sometimes similar standards are set up for advancement, either in rank or salary. As a result our schools of education are crowded, particularly during summer months, with teachers whose sole purpose is the attainment of such credits as will make their future more secure. In some ways these earnest seekers present a pathetic spectacle. Not that they do not profit in a degree from the experience; but their attitude of passive acceptance of what they are told, and their vision centered so directly on the credits, or perhaps the degrees, which is the main goal of their efforts, make the work less valuable than it ought to be; and their point of view modifies the whole outlook of the institution for the worse. Perhaps the standard of teaching in the public schools has improved as a result of these requirements, but it is doubtful if the results are commensurate with the expectations of those by whom the system is imposed. At any rate, it is an interesting commentary on its entire validity that the private institutions of the better class, whose salary scales enable them to secure the best teachers, make no requirements of their faculties for work in education.

Whatever may be the effect of such requirements in the lower schools, an extension of it to the colleges must be regarded as of very uncertain value. There is at this time some danger that such a result may be brought about by fiat from above in the case of institutions under public control. In particular, the junior college offers a tempting opportunity for the imposition of these requirements—a movement which, if successful, will contribute still more to make the work of the institution what it already tends to be, an extension of secondary training rather than the beginning of college work. The objections to the existing preparation for college teaching are valid enough; but in the attempt to improve the situation, it is doubtful if much can be accomplished by requirements of this order. To the present mistaken notion that the university doctorate has more than a very limited significance in giving evidence of the capacity of the applicant for college positions, we merely superim-

pose another mistaken notion that educational credits tell us much concerning the teaching ability of the candidate. We already pay too much attention to data merely formal in its character. An increase of it does not seem to me materially to help the situation. So, if the remedy for defects in the learning of the prospective teacher is to be sought by increased requirements in education, we would do better to leave matters as they are.

I have occupied so much of my time in the discussion of apparent defects in the training of college teachers that I have little left for my assigned subject, "Desirable Types of Graduate Training for Prospective College Teachers." Perhaps that is well, for I have little hope that the type of institution I have in mind will ever be established. It would be based on the hitherto unused principle that an institution for training college teachers should be designed primarily for that specific purpose—not merely one branch of it, but the purpose as a whole. Differences might exist between various individuals as to the details of the plan by which that might best be done, but the formulation of that basic aim would in itself do much to change the emphasis of the institution for the better. It should be no inferior branch of the university for the purpose of furnishing a cheap "teacher's degree," but should require at least equal time to that now devoted to the attainment of the doctorate. A careful selective process should be applied to candidates for admission, with collegiate rank as only one of a number of considerations to be borne in mind. Of course, students of low mental capacity, as indicated by these grades, would not be admitted; but neither would the student of apparently high scholastic attainment whose rank was acquired by plodding industry without much trace of originality or inspiration and who has given little evidence of possessing a marked and attractive personality of his own. In other words, the school should select only those who, from all available data to be secured, give evidence of capacity to teach. Instruction in the specialty of the individual should be thorough; it should pay much attention to fundamental principles, to relationships, to the general bearings of the subject, and less, perhaps than is now commonly the case, to details of fact. Every student should be required to enter upon the work of research; he should test his capacity for

and interest in such lines of activity. However, no requirement that a positive result must be obtained should be imposed; and no publication should be demanded, or even allowed, unless the results were obviously worth the while. The course should be sufficiently elastic so that the individual in whom the research instinct is seen to develop may have abundant opportunity for that branch of work, while his companion, who may be less attracted by such work, should be given the opportunity to devote more attention to other, and to him more agreeable fields. Work in education should not be neglected, although formal requirements of credits, with the idea that such credits have much real meaning, should be eliminated. Work in practice teaching should be provided; and such work should be a definite part of the course, not merely a refuge for the impecunious to pay a part of their expenses, at a positive loss in the time required for the completion of their training.

Highly important would be the character of the faculty of such an institution. Its members must be men thoroughly in sympathy with the fundamental purpose of the school, and willing to make their own efforts conform to the common end. It would be necessary for them to sacrifice, to a certain extent, their scholarly prestige because there would be a lack of unpaid laborers (such as candidates for the degree of Doctor of Philosophy often are) intensively to develop, under direction, the particular lines in which the interests of the teacher lie. At the end an examination covering the field of specialization should be given, which should be searching in its test of the command of the student over general principles and his ability to apply them intelligently and independently to specific problems, but which should not, perhaps, concern itself much with a mass of detail. Some degree, I suppose, would have to be given; but obviously it ought not to be that of Doctor of Philosophy.

The actual educational process of the institution, in a technical sense, should not constitute the whole of its activity. Living conditions should be comfortable, although not extravagant, and should be shared by all. The scattering of the students through the university town, in cheap and barren lodgings, should be avoided; the hasty gobbling of food merely for nutritive purposes in cafeterias and restaurants should likewise be under the ban. The group of

varied interests should capitalize the attainments of each, to the advantage of all. Comfortable and attractive common living-rooms should be provided. The student should be encouraged to use them, with sufficient leisure at his disposal so that such reasonable use of time would not bring upon the individual the guilty feeling that he was stealing from the all-important work of the day. Dining should be in common, with due regard to the amenities of life. Range of interest should be cultivated, not by precept, but by exposure to the opportunity of becoming acquainted with many things. Relieved of the necessity of "making a positive contribution to knowledge," the student should have sufficient leisure to develop his mentality along lines sometimes quite diverse from his main interest. He would not, as a result, so much advance human knowledge; but he would come into a position whereby he would be better fitted to advance the interests of the undergraduate students whom later he is to teach. Range of interest, mental alertness, activity, should be important ends, in addition to competence in the chosen specialty of the student. To test the former of these desirable requirements, I would have as an essential part of the final examination a searching test, in part of the objective variety, not to be prepared for by any process of cramming but only by the tastes formed by the student and by the information he had gained as a result of these tastes in his undergraduate and university days. From evidence thus acquired and from their acquaintance with his activities through the years of graduate training, the faculty of the institution should be thoroughly conversant with the qualities of their graduates and should very definitely be able to inform those who are looking for recruits to college positions of the characteristics of each graduate as a whole.

I am aware that the product of such a school would be looked upon by the proponent of the graduate training of today with a large measure of scorn and dismissed from consideration as a dilettante. If by the word "dilettante" we mean an individual of extremely superficial acquirements, too indolent really to do any serious study, the outcome certainly would be undesirable. If the system which I have outlined is strictly followed, superficiality would not be effective even in permitting the individual to meet successfully the tests

of the school itself, to say nothing of enabling him to secure a desirable position as a teacher. As to laziness, I do not know that a man thus trained is more likely to be indolent in the actual work of teaching than is the product of the present system. I should even expect as much scholarly productivity from him, if such productivity was allowed to rise from innate interest rather than from a demand of the authorities of the institution for so many square feet of printed material each year. It must be remembered that the system which I advocate is not, in all respects, untried. In some of its aspects the scheme bears a resemblance to the system in vogue at Oxford and Cambridge, although in it there are radical modifications both of the purpose and of the methods of those universities. The success of the Rhodes scholars as teachers in American colleges is not a matter of doubt. So much is it the case that some of our institutions are recommending prospective teachers to prepare themselves for the calling by study at these old English seats of learning rather than at the American graduate schools; and the results, in general, are eminently satisfactory.

It is not to be understood that I am suggesting this type of instruction as a substitute for the present graduate school, but rather as an addition to it. I think it is true that we have more graduate schools of the normal variety than we need or can profitably maintain, and some of them might to advantage be converted into institutions of the newer type. But the entire disappearance of the institution would be a calamity indeed. In training men who look forward to a career of pure research, in training teachers for such men, in enabling scholars of eminence to extend their activities and their influence by gathering groups of disciples who work toward a common end, it is doing a work that is wholly admirable. It is only in the training of college teachers that it is justly subject to complaint. Nor would I exclude the man trained in such institutions from the faculties of our undergraduate colleges. Many born teachers come from these schools, and the born teacher the college is only too glad to get whatever his origin may be. Even the narrow specialist has his place in the college; and he should be secured for that place, where he would be happy, useful, and efficient, but not for the place of elementary instruction, for which he has few qualifications. If to

these men, and on a position of entire parity with them, we could add to the college faculty individuals trained along the lines which I have mentioned, it is my firm conviction that the efficiency of the institution would be immeasurably improved.

The scheme which I have outlined is a dream, although I do not think it to be a fanciful one. Too many obstacles stand in its way to hope for its introduction in the university of today. It would be an expensive undertaking, requiring a large endowment, although I can conceive of no more profitable investment of money toward educational progress than this would be. It would be difficult to secure for it a faculty which would be scholastically competent for the work and which would enter whole-heartedly into the spirit of the enterprise. The institution would, in its first years at any rate, enjoy but small measure of favor among educational leaders and bring to the university which founded it but little of the prestige which the conventional graduate school is supposed to supply. It would be obliged to encounter the ridicule and scorn of the more conservative educational leaders, and ridicule is always much harder to meet than is argument. And finally, college executives, constitutionally timid of lowering the "scholarly tone" of their institutions, however much they may object to the training which candidates for faculty positions at present receive, would hesitate to break away from the allurements of the Ph.D. degree. So, as I have said, the conception is but a dream. But if the dream should come true, I can conceive of no project which would be of such promise for the improvement of the liberal college.

CHAPTER V

THE NEWER EDUCATIONAL PROGRAM AND THE TRAINING OF TEACHERS

GORDON J. LAING

When I was assigned, as my part in the program of our dog-days convention, a discussion of the subject "Desirable Types of Graduate Training for Prospective College Teachers," I accepted the topic with gratitude. For, knowing that the two chief difficulties in participating in any program are, first, the finding of a subject and, second, the discovery of something to say about it, I was delighted to think that in this case at least the first of these obstacles did not exist. At any rate, I had my subject, and it seemed a promising one.

But subjects given out by chairmen of program committees are as open to suspicion as gifts offered by Greeks, and you never know what they have in them until you open them. And I had not examined this one long till I realized that it was full of highly difficult and controversial questions, and in its comprehensiveness involved not only the two major problems of higher education, namely, the general curriculum of the graduate school and the curriculum of the college, but also the manifold subsidiary questions in the graduate and undergraduate field which are the subject of so much discussion today. There on the graduate side, for example, looming large, were such topics as the usefulness or uselessness of seminars, problem courses, or research courses for the prospective college teacher; the place of informational courses; the use of recitations; the advantages or disadvantages of informal courses; the value of courses on contemporary conditions in the colleges, and of supervised practice-teaching of undergraduate—preferably Freshman or Sophomore—classes. And on the undergraduate side there appeared an equally important group of problems that must be settled before anyone could formulate with even an approach to finality the most desirable type of training for those who were planning to be college teachers. For, obviously, one cannot hope to produce effective college teach-

ers unless he has a clear idea of what the college is; what it stands for; what its function is; where it fits into that long course of study that extends from kindergarten to doctorate. And some of the problems involved here are the junior-college question and the senior-college question. Are the Freshman and Sophomore years the end of the secondary-school process? Are Junior and Senior years the end of the collegiate course, or are they the beginning of graduate or university work? In a word, what is this institution for which the graduate schools are expected to turn out competent instructors? What is it now, and what is it to be in the future? How are we to visualize it? Are we to think of it and plan for it and train teachers for it as a four-year unit, upon the continued solidarity of which the whole hope of educational salvation, cultural progress, and scientific advancement ineluctably depends, as some of its champions warmly maintain? Or are we to join issue with these conservatists and take the position that the four-year college has become a bed of Procrustes into whose narrow confines we are jamming the graduates of a lower-school system that, especially in its elementary division, has shown an intelligent progressiveness that puts the college and graduate school to shame? In other words, are we to regard the four-year unit as merely of archaeological interest, and forthwith in our thinking and resultant reorganization definitely tie up the Freshman and Sophomore years with the high school and combine the last two years of college and the graduate school in a single unit?

These, then, are some of the problems that are fundamental for the elucidation of this apparently simple theme allotted to me. Nor have I much hope that we shall solve them on this bright July afternoon. In fact, I do not think that we can even attempt to solve them unless we give the discussion a somewhat wider range than that indicated by the subject assigned. For this reason I have taken the liberty of expanding the topic; and the title I have given this paper is, "The Newer Educational Program and the Training of Teachers." In brief, before describing what seem to me desirable types of training for college teachers, I shall give a brief outline of what in my opinion the courses of study of the present college years should be.

In the first place I think that we should capitalize the progress that has been made by the schools of education in the elementary

schools. Two years have been saved there, and it has been demonstrated that in the best schools of this class the pupils are as far advanced both in mental attitude and in information after six years as they used to be after eight. This has been accomplished through more scientific methods of teaching and the elimination of duplication. This is, I believe, the greatest achievement of the science of education in our generation. But what has been the gain for our educational system as a whole? Almost nothing. For, insomuch as the average age of graduation from college remains pretty much the same, these two years saved at the lower level are lost somewhere in the high-school and college periods. This loss constitutes a grave problem for high-school and college administrators today. If it could be replevined, we should have students well equipped for work of Freshman grade at fifteen or sixteen years instead of at seventeen or eighteen. Obviously, however, such students would hardly be old enough for that degree of liberty and independence which the present organization of our colleges permits, and they would be at that disadvantage which maladjustment to one's social relations inevitably involves. Herein lies one of the chief functions of a separate unit consisting of the Freshman and Sophomore years with a special organization of its own, independent both administratively and scholastically of the high school below it and the university above it. Administrative independence is essential for it because its problems of organization in both social and academic relations are different; and its scholastic independence is requisite, for it must not only mark an advance on secondary-school ideals but it must also, if it is to succeed at all, enjoy a generous degree of freedom from the dictation of the university departments. Its aims and purpose do not coincide at all with those of the latter. For, while naturally some measure of specialization would be permitted and even encouraged in the case of students giving unmistakable signs of particular interests or special bents, the main objective of the two-year course would be the completion of that general education which everyone needs. Whether a degree should be given at the end of it, whether even the Bachelor's degree at no distant date might not be used to mark this stage of advancement, is not a question that can be discussed in this paper. That, after all, is a minor point, for degrees

and diplomas, like medals and ribbons, are only a concession to that naïve relic of primitive barbarity that still inheres in our so-called "culture." But at any rate, the graduates of the junior college would have reached one of the great turning-points in their career. Some of them would go into business, while others would go on with their studies. It would be a parting of the ways, more important perhaps than any other in their life. Those who had shown special interest in study and those who had always intended to go into business would be easily disposed of. A very notable problem, however, would be furnished by those who had shown no predilection for either study or business but who, wishing to continue their academic indolence or scientific negligence or educational dalliance or whatever you wish to call their intellectual ineptitude or inane moronic inefficiency, planned to remain in the institution that afforded them so many pleasant social relations and such exciting athletic exhibitions. Indeed, it is clear that it would be incumbent on the officers of the college to bid these non-academic flappers and anti-study sheiks a sad and even tearful farewell, telling them that great as their love for them was, profound their affection, appreciative as they were of the contribution they had made to the community life as campus decorations, they had, after careful consideration and with great reluctance, come to the conclusion that the particular kind of ability which they had displayed needed a larger theater than that afforded by an academic institution and so they should try the wide, wide world.

On the other hand, the serious students going on with their work would begin a course of intensive specialization bearing directly on the life-careers upon which they had definitely decided. Those who were going to be teachers in the field of the humanities would specialize in the languages, literatures, or social sciences in which their particular interests lay; those intending to be teachers of the physical, biological, or earth sciences would do likewise; and those going into law, medicine, divinity, social science, administration, or commerce would concentrate on those subjects that constitute the most effective approach to research in or practice of those professions. In my opinion the current theory that the course of study leading to the A.M. or the Ph.D. course cannot be begun till after

the taking of the Bachelor's degree no longer holds. It is a survival of the educational system of thirty or forty years ago. It is based on the tacit assumption that we have made no progress in education in a generation. Any well-equipped college of today should be in a position to give the Master's degree two years after the end of the junior-college course, and any university of the first class should be able to give the Ph.D. degree four years after graduation from the junior college. If a student cannot reach the stage of advancement marked by the Ph. D. degree after four years of intensive training in his specialty, the probability is that he has not the capacity to attain it at any time. In regard to the preparation for the professions other than that of teaching, the situation is similar. It seems to me that the present requirement of a four-year college course as a preliminary to a medical course or (as is the practice in some universities) to a law course is both clumsy and unnecessary. The time to begin these professional courses is at the end of the junior college.

It is for such a system of education as this that we ought to train our teachers; and insomuch as the system as described can be set up and succeed only on the basis of methods of instruction of the highest degree of efficiency, the question of teacher-training is one of paramount importance for the graduate schools. Any false ideals, any lack of definiteness of aim, failure of any kind to see objectives in proper perspective, will result in a catastrophic collapse compared with which our present mild mediocrity of quasi-accomplishment will blaze forth as a dazzling consummation of supreme achievement.

Let us look first at the teacher-training of the candidates for the Master's degree, who form the largest group in the graduate school of arts and literature. They occupy a rather peculiar position in our universities. Many departments of the leading institutions adopt a somewhat stepmotherly attitude toward them. As the great majority of them are, or intend to be, high-school teachers, they are regarded as outside the pale of that real research work to which so many professors confine their activities. Not long ago I heard a departmental chairman say—and I am sure that I need not add that he was not a member of the Chicago faculty—"Neither I nor any member of my department is interested in Masters. They must, I

suppose, be taken care of in some way, but either from the limitations of their ambition, for they aspire to nothing higher than a high-school job, or from that mental arteriosclerosis that results from the indurating effects of long years spent in secondary-school teaching, they are incapable of research." This is a very common attitude, and in it lies in all probability the explanation of that bargain-counter Master's degree given by some of our most famous universities. Even in those institutions that have made a more consistent effort to maintain the standard of the degree, the candidates for it are carefully excluded from the more advanced courses. They are given informational courses or survey courses or, in the case of the foreign languages, recitation courses in authors they have not read in college. The work is nothing but an extension of their collegiate training. Only in the dissertation, if a dissertation is required, do they get a glimpse of a method of study different from that which they pursued for four years in college, and to which in many cases their insensibility to the call of the higher scholarship, their lack of responsiveness, and the deplorable immobility of their mental reflexes are largely due. It seems a pity—does it not?—that those who have already suffered so much should not in this fifth year of their academic pilgrimage be given at least a sight of the higher ranges of scholarship. To be sure, some of them are unpromising material. It was only the other day that a professor in our own School of Education, after reading a term paper by one of his students and while still under the shock occasioned by the violation of every principle which he regarded as sacred in English style, arrangement of material, and method of presentation, said to the offender: "Madam, I regret to state, but it is only fair that you should know, that if this is the best you can do, you must give up all hope of ever getting a Master's degree from the University of Chicago." "But Professor," she said, "I've got it already!"

The Masters, however, are not all as bad as this, and it is my belief that the slighting attitude toward them is a great error. Just because they are to be secondary-school teachers we ought to realize that their standards of scholarship should be of the best. It is only those Masters who have been well trained who can prepare and send to the junior college the kind of student who will be competent to

carry on in that course of study I spoke of in an earlier part of this paper. I have read Morrison's *The Practice of Teaching in the Secondary School,* and as a result of that reading I have a vivid picture of the enormous waste of time and effort now going on in untold numbers of high schools in this country—waste caused by adherence to methods of teaching so antiquated as to be of museum value only, chief among which are those Siamese twins of pedagogy, lesson-learning and lesson-reciting. Fortunately, Morrison's book is not critical only; it is constructive also and points out the changes that should be made. Moreover, we now have in the books of two students of his—the late D. C. Bailey, of the Lyons Township High School at La Grange, Illinois, and E. T. Smith, of the Central State Teacher's College at Stevens Point, Wisconsin—two practical demonstrations of the application of his theories to the teaching of American and European history respectively. I do not hesitate to say that high-school Seniors trained in the constructive and independent methods of study outlined in these books are sure to have a sounder and more advanced view of historical study and a greater facility in using books of reference than many a college Junior. University professors are sometimes accused of talking too much about research, of making a shibboleth of the word; but my criticism would be along a different line. I do not think that they talk too much about research, but I do think that they have confined instruction in it too exclusively to a small group of advanced students. They do not always realize that there are all degrees of research and that the first steps in it should be taught in the lower schools and that it is through elementary forms of independent work, organized naturally in the simplest way, that students are best trained in that habit of inquiry that makes real investigators of them by the time they reach the upper classes of college. Human beings must learn to walk as infants before they can stride or run or dance as adults. But in education we forget this and expect our students to do the dance of research before they have learned to stand on their own legs and while mentally they are still on all-fours. And perhaps it is this early lack of practice in inquiry—I say "inquiry" lest I seem to taint the sacred word "research" by applying it to so simple and incipient a process—this early neglect of the practice of finding things out for

one's self, that accounts for the strange turnings and twistings, the weird gyrations, the puzzling tergiversations, the complicated shuffles, and blind staggers of many of those who essay the rôle of scientific research worker.

Surely, then, the importance of the teacher-training of the Masters cannot be denied. They must be able to induct their students into habits of intelligent inquiry. And how can they be expected to do this unless they have themselves been trained in proper methods of approach? We should therefore cease to lay so much stress on informational courses for Masters and insist that a large part of their course work, like their dissertation, should involve the handling of source material and the writing of papers that would be more than compilations of information derived from dictionaries, encyclopedias, and other general treatments of their subject. I mean that we should treat the prospective Masters as graduate students and not as dubious denizens of that misty, hazy no-man's land that lies between graduate and undergraduate territory. But, someone will object, the candidates for the Master's degree are not competent to do research work even of the most tempered variety; they do not know how to go about it; and, among their other disabilities, they cannot read French or German. The answer to this objection is that if they are incompetent to do such work, they should not be admitted to candidacy for the degree; and it will be remembered that the requirement of formal admission to candidacy after a term or so of residence gives the departments absolute control. There is no doubt that at present this control is not exercised as rigidly as it ought to be. A stricter observance of it will result in fewer Masters but in much better ones. So far as a reading knowledge of French or German or both is concerned, more and more departments are making the requirement; and the results are distinctly satisfactory.

But more than this training in research is necessary if our Masters are to be efficient high-school teachers. We must also require at least one major in approved methods of teaching the subject in which the candidate is specializing. In the Department of Latin in this University we have for many years offered such a course, and there is no doubt about its usefulness. By taking it, those who have already had experience as teachers are kept in touch with the latest

methods, while the younger ones are saved from the disasters of maladjustment during the first year or perhaps years of their teaching careers. I know that there are many who still insist that there is no time for such courses and that a knowledge of the subject will enable anyone of ordinary common sense to succeed as a teacher. That there are not as many who hold this view as there used to be carries with it some small degree of comfort; but one's dominant feeling about it is, not encouragement, but surprise that in this day and generation there should be any survivors of what one, though carefully eschewing all extravagance of statement, meticulously avoiding all exaggeration, and giving full play to the Christian virtues of charity, considerateness, patience, and good will, can only describe as the Paleozoic or Miocene period of education. The amount of damage that these die-hards have done to the intellectual possibilities of high-school students, and so to the college careers of high-school graduates, by their obstinate persistence in their time-worn, tattered, moth-eaten, and fly-blown misconceptions of the art of teaching is incalculable. The educational waste involved is stupendous. For, to a large extent through their influence the universities have been sending to the high schools thousands and thousands of so-called Masters, gorged with the lecture notes through which they knew they could pass their examinations, replete with memorized excerpts of their reading assignments, crammed with dates and other tags of erudition, but wholly unable to develop the thinking and reasoning faculty in young students for the simple reason that it has never been developed in themselves. They are the stuffed capons of the academic inclosure, stolid, stodgy, immobile, and unproductive. And if anyone thinks that this picture is overdrawn, let him explain the fact that while in France the teachers in the Lycées and in Germany the instructors in the Gymnasia are frequent contributors to the periodicals in their respective fields, it rarely happens that one of our high-school teachers publishes an article or writes a book in the field of his specialization. Why should they? They have never been taught the technique or been encouraged to believe that they could. And yet it can hardly be doubted that many of them have a capacity that, if properly developed, would have resulted in an intellectual activity that would have been an abiding

satisfaction to themselves, would have raised the whole standard of secondary-school accomplishment, would have created an interest in scholarship in their students, so soon to be ours, and thus have assured them their rightful place as participants in the collaborative enterprise of education. Nor can I leave the subject of the teacher-training of Masters without reminding you that while the majority of them are high-school teachers, many have positions either in two-year or four-year colleges and so are in still greater need of that more enlightened technique of presentation that I have attempted to describe.

It is, however, the Doctor of Philosophy that we think of as the college teacher par excellence. In the graduate school of arts and literature the great majority of candidates for the degree intend to be teachers in college or university. The students in the language and literature groups rarely have any other career in mind. It is only in such departments as economics and political science that a fair number can be found who are planning activities of other kinds. In view of this situation a number of questions arise: What are we doing in the way of equipping them for their chosen work? Have the departments of the various graduate schools kept the teaching career sufficiently in mind in the organization of their program of studies? Or have they arranged their courses with an eye to the production of research workers only, thinking of the teacher's duties merely as a means of livelihood that will furnish the young instructor or professor with enough money to buy food, drink, clothes, and shelter for himself and his family, and enable him to pay insurance premiums and contribute to the portrait funds of retiring colleagues, while he carries on his research? And finally comes the question: What sort of college teachers do our Doctors of Philosophy make? I do not mean to imply that these are all the questions that have been or might be asked, but they are some of the most obvious ones.

It is not necessary to remind any of you that for some time—and especially during the last two years—there have been heard from the general direction of the colleges low rumblings of discontent, ominous mutterings of dissatisfaction, savage growlings of complaint, accompanied by flashes of forked criticism directed immediately at the teaching capacity, or, to use the word of the crit-

ics, incapacity of the brilliantly hooded products of our graduate schools. College officials indeed have spoken with a frankness that leaves one in no doubt as to what their opinion on the subject is. If they are right, it is high time that the graduate schools should revise their methods; if they are wrong, they should be convinced of their error of judgment.

First, let us deal with the charge that so much time is spent on training in research methods, so much emphasis placed upon it, that the graduate student, by the time he takes his doctoral degree, has no other interest in the world and, when he gets an appointment as a college instructor, will deliberately neglect his teaching and devote himself to the continuation of his research. Doubtless there are some Doctors of this kind. I have known some of them myself. I remember one who, when he lighted on some problem that interested him, absolutely forgot everything else. He could think of his problem only. His wife's most interesting report of the latest faculty gossip, his small son's brightest sayings, his friends' comments on the legislative atrocities of the last faculty meetings, his colleagues' caustic condemnation of the congenital unreasonableness of deans, and even the discussion of the high desirability of a general increase in salaries made not the slightest impression on him. He heard them not. Brooding over his problem, he was impervious to everything else. He was not interested in food or games or entertainments, but only in the solution of that puzzle that ever seemed just about to reveal its secret but ever eluded him. He sat up till all hours of the night and got his sleep while conducting his classes. To his routine courses indeed, while he was in the middle of one of his investigations, he paid no attention at all, other than a late arrival, a somnolent presence, a convincing demonstration of complete lack of preparation, and a hasty departure. What was the effect of this on the students? Not exactly favorable, of course. A colleague happened to have one of his students in a seminar and was going over his term paper with him. "This paper of yours," he said to the hapless youth, "is simply impossible. It would be a disgrace to a Sophomore. You had a four-year college course. Didn't you ever write a paper for any of your professors?" "Not one," said the student. "What were you doing all those years then?" asked the professor. "Attending

recitations, listening to lectures, and getting up assigned readings," was the reply. "But you have been in this institution for more than a year. Haven't you ever made reports in any of the seminars?" "Only one, and that was in Professor Blank's seminar, and he went to sleep on me while I was reading it." (Please note the student's phrase "on me." It is the best example in the English language of what we Latinists call "the dative of disadvantage.") But it may be asked: Were the administrative officers of the department and of the university aware of this professor's method of conducting his classes? They were perfectly well aware of it. Did they reprimand him or seek his removal? They did not; they promoted him and increased his salary. And they were right in doing so; for while his system—if in a burst of optimism I may use that word—while his system of teaching was for the most part atrocious, yet he was so outstanding in research, wrote so much that redounded to the credit of the university, and through his reputation as a scholar attracted so many students to the department, that in spite of his pedagogical delinquencies he was a distinct asset to the institution. Moreover, though he went to sleep on the student whom I have mentioned—and I think that you will all agree with me that there are students whose reports are of such a character that the faculty of being able to sleep through them is a gift of no negligible value—yet he exerted a strong influence upon others, especially the good ones; and though he did not help even them much in routine courses, he inspired them with the greatest enthusiasm when he had them in courses on those subjects in which he was carrying on his own investigations. More than that, an unusually large number of his students have turned out to be productive scholars and good teachers.

I have described this case in some detail because it seems to me to illustrate in a concrete way several phases of this question of college and university teaching. For, while the characteristics of the professor described were unusually prominent, his, after all, is a typical case. What are we to think of it? Would you, after the account you have heard of his ways and his work, say that he was a poor teacher? Could it not be urged that his stimulation of the best of the students in research in his special field more than compensated for his notorious neglect of his routine classes? Would any of

you in the President's position have acted otherwise than he acted? Wouldn't you too have promoted him and increased his salary, especially if you happened to know that three or four other universities were anxious to get him? I am sure that every one of you would have done just what the President did. It is, indeed, a difficult question. There are many strands to it. It is hard to determine just what good teaching is. Moreover, there are so few 100 per cent professors—men who excel in both research and in teaching. I suppose that outside of this room there are not half a dozen in the whole country.

Would this professor's courses be of service to prospective college teachers? His routine courses certainly would not be of the slightest use, except as a horrible example. They would probably do some harm, for the students in them, seeing him prosper in spite of them, might imitate him in his pedagogical sloppiness without having any of his compensatory qualifications. But, while this is true, it is also highly probable that the seminars that he gave on those subjects in which he was carrying on investigations were among the best things that the students in the department got during their graduate work, because through them they had an opportunity of acquiring the technique of independent investigation and that critical attitude toward traditional views which is an absolute essential for a college teacher of the first class. For, the drift of this whole paper is that no one has the ghost of a chance of being an effective teacher in any grade of school or college unless he has both a critical and a constructive mind. No one can make scholars unless he is a scholar himself. It simply can't be done. Even though he be famous for the range of his erudition, though he be as full of information as an encyclopedia, as systematic in the organization and conduct of his courses as a railroad time-table, yet if he is wholly without the urge to investigation and does nothing to stimulate scholarly or scientific ambition in his students, he can never attain the position of ranking professor. He may be useful in a department; he may for some departmental activities be almost indispensable; he may do honest, careful, conscientious, and systematic work; but he can never be a departmental ace, nor will any courses that he gives ever contribute to the making of a great college teacher.

Research courses of the right sort, then, must be given a prominent place in the training of prospective college professors. And any effort to reduce the time now given to courses of this type in our graduate schools is a mistake of the first magnitude. As I endeavored to show in a paper I read before the Association of American Colleges in Washington last winter, the inefficiency of Doctors of Philosophy in teaching is due in a large number of cases not to the fact that they have spent too much time on research but to their not having spent enough time on it. And with the increasing emphasis on the constructive side of academic work that is certainly the dominant characteristic of the newer educational program, a thorough and intelligent discipline in approved methods of investigation becomes more and more important for teachers with every single step of advancement in this elusive, baffling, precarious, and puzzling thing that we call "education."

Moreover, in seminars and other advanced types of courses students may be trained in lucidity of exposition and effectiveness of presentation. Those professors who are willing to go over a student's paper with him before he reads it to the seminar can do wonders for his style in writing and speaking. Professor Warren, once chairman of the Department of Latin in the Johns Hopkins University, made his students hand in their seminar papers to him a week or ten days before the meeting at which they were to be read. He spent hours on each of them and then had a conference with the student. Nothing sloppy or shoddy or illogical ever escaped his red ink. "What do you mean by this statement?" he once roared to a student, and again and again in the crescendo of professorial irritation, "What do you mean by it?" Nor was he appeased till finally the student faltered that at any rate he had not meant any harm by it. Some of our own professors here do not allow their students to read their papers to the seminar, but require them to speak, with only such aid as they can get from brief notes on cards. This has many advantages as a training in presentation.

But while a college teacher must be trained and well trained in methods of investigation, it is equally clear that he must show discrimination and judgment in the use he makes of his research equipment in the college courses that he gives. The young Doctor of Phi-

losophy who proceeds to unload his technical resources on the first college class that he meets is, of course, a menace and a peril. He must be made to realize that what he has got from his research courses is a knowledge of method and that the particular subject of any of the seminars that he has had, or even the results of that great masterpiece, his dissertation, may not be of any special benefit to the young students on the benches before him. He must be temperate and reasonable in all things, even research. Imagine the effect on a college class of the briefest account of some of the theses whose titles appear in the commencement programs of our universities, the perusal of which has carried so many drooping faculty members through the exhausting routine of convocation. I still remember the title of one on the program of our June Convocation, namely, "A Study of the Mechanism of the Action of the Secretion of the Posterior Lobe of the Pituitary Body on the Kidney of an Unanesthetized Dog." Perhaps there are men who, in spite of their Doctor's degree, are still idiots enough to inflict material of this kind on college classes; but I do not think that there are many of them. Certainly there is no reason why such a person should hold his instructorship long.

But there are other courses that the future college professor should take. He should have a generous number of background courses—either formal (that is, meeting regularly) or informal (consisting chiefly of private study under the direction of a professor). Not even a keen research man will succeed with college classes, unless he knows the subject matter of his specialty widely and deeply. At present there are far too many of the courses of the formal type. It would be of the greatest benefit to the student and save an infinite amount of time for the professor, if the informational courses now being given in our graduate schools were reduced by 50 per cent. Such courses indeed should be limited to subjects in which, either on account of their newness or the widely scattered nature of the material, no satisfactory treatments are available in print. Why should a student have a professor ever at his elbow? Is he never to learn to work by himself? What is the idea of it? Is it to furnish employment for the professor? It is only in education that this method is used. In everything else, whether it be a business or a

game, after some initial instruction the novice goes on by himself and makes or breaks himself by a process of trial and error. I wonder how many careers of fair promise we have wrecked by our eternal spoon-feeding. I have long been an advocate of the informal course, but I find that many professors are extremely doubtful about it. On any subject where they happen to have their lectures neatly written out and prepared, they are adamant and will make no concessions. It is, indeed, a curious but none the less interesting fact that there are persons naïve enough to believe that a course of formal lectures given by a professor, terminated by an examination set by the same professor, has real educational significance. Except in those remote and inaccessible subjects to which I have made reference, it is likely to have no significance. It is analogous to that lesson-learning and lesson-reciting system of the high school which I mentioned a few moments ago. The examination indeed constitutes the very mildest of academic games in which the gentle ping of the professor's question is returned with mellifluous pong by the agile student, as he deftly plies the memory racquet and scores point after point by verbatim quotation of the professor's wisest cracks—a game in which the boundary lines are not the limits of the subject but the limits of the lectures.

But besides research and background courses, students who are going into collegiate teaching should have some professional training. There should, for example, be a course conducted by some member of the department especially interested in teaching in which methods of presenting the subject to students of college grade should be thoroughly discussed. In almost every department or group of departments in a university there is someone who has made a special study of methods of teaching, and he should be charged with this part of the departmental program. It would be a discussion course in which not only the best subjects for college courses and the most effective way of carrying on the work would be reviewed, but in which every sort of problem with which a young instructor is likely to be confronted would be systematically studied. Such a course would give the prospective Doctor a degree of orientation that would greatly increase his efficiency in handling his first classes. I know half a dozen men in this University who have special capacity for

the organization of such a course; and in departments where there are no persons of this kind, appointments should be made. For it is desirable that the person conducting this course should be an officer of the department and not a member of the school of education.

On the other hand, one of the courses that the future teacher ought to take should be given by a professor of education, that is, a course on present conditions and trend of development in the college. Only one who understands his environment and has at least some faint inkling of what the institution to which he belongs is can hope to be a successful officer.

Still another thing should be demanded of prospective college teachers. They should be required to do a certain amount of practice teaching under the supervision of that departmental officer of whom I just spoke. This is not an entirely new feature of graduate-student life. All universities assign a certain number of junior courses to assistants who for the most part are graduate students. In some institutions Fellows are expected to render teaching service. The new element in the program I am suggesting is that in each department the conduct of these courses would be under the immediate direction of a departmental officer. The present system is not satisfactory. For, although some of the assistants do their work reasonably well, others do it in a highly perfunctory manner, while still others are unspeakably incompetent and constitute one of the problems of the college deans. There is undoubtedly a feeling among the assistants that this teaching of classes is of but minor importance compared with their own program of studies toward the Doctor's degree. I am sure that we should get much better results if the work were organized and directed by a departmental supervisor.

Another means of teacher-training has frequently been suggested and that is, observation by graduate students of class instruction by members of the faculty. There are some possibilities here, but clearly this is a method that calls for the utmost wariness in administration. As I have already indicated, distinction in scholarship does not always imply lucidity in exposition, and some brilliant teaching careers might be irretrievably ruined by the observation of the class methods of the wrong professors. Still, in every institution there are some men with outstanding reputations as teachers. In a fac-

ulty of three or four hundred persons we may safely assume that there are four or five men of that kind, and any student who planned to be a teacher and had not wit enough to drop in at some of their class meetings would be missing one of his greatest opportunities. In stating above that this method was full of peril, I had in mind a case that occurred in this University some years ago. A professor in one of the language groups became obsessed with the strange idea that the teachers in the University High School were not starting the pupils in the right way. He accordingly asked the privilege of conducting the beginners' class himself, announcing it as a credit course toward the Master's degree for all graduate students observing his method from the back benches. It was one of the most doleful of all the educational experiments tried on the Midway. For, within a brief period, the children were complaining that they did not understand any of it; the parents of the children were expressing their opinion of the School to the Principal with that fulness of vocabulary, amplitude of style, and vicious vehemence of invective that only irate parents are capable of; the Principal, driven frantic by the assaults upon him for something that had been imposed upon him against his will, appealed to the Director of the School; the Director, whose own language is said to have attained an unusual degree of richness during the episode, referred the matter to the President of the University; and the fifteen or twenty graduate students who were taking the course as observers ceased to attend and let the credit go, but not, according to rumor, till one of them—she was a high-school teacher herself—had approached the professor with the words with which Cicero addressed Catiline: "Quousque tandem abutere patientia nostra?"

I remember another case where observation proved to be fatal. The trouble in this instance was not caused by poor technique on the part of the teacher but by inability to apply successfully after a few months' preparation a method which the professor had perfected in the course of a lifetime. It was at the summer session at Columbia some years ago. The officials of Teachers College had brought over Dr. Rouse, headmaster of the Perse School, Cambridge, England, to demonstrate his method of teaching Latin by the direct method, in which no word of English is ever used. The Teachers College people

had got together a class of fifteen or twenty children who had never studied Latin, and behind them as observers sat in serried masses, hundreds of high-school Latin teachers. One of these observers was a member also of a class that I had there that summer, and I asked her one day what she thought of the Rouse system. "It is wonderful," she replied, "and just as soon as I get back to my school in Minnesota this fall I am going to use it with my beginning Latin class." About six months later she came into my office in Cobb Hall. I said to her "I remember you told me that you were going to introduce the Rouse method in your school. Did you?" "Yes," she replied. "Was it effective?" I asked. "In a way it was," she answered, "the Board fired me at Christmas."

I do not think that any of this teacher-training should be substituted for research work. It should be added to it. At most, it might be substituted for some of the informational courses taken in such quantity by graduate students. And it should be required only of those candidates for the Ph.D. who have definitely decided to be college teachers.

Besides the help that such courses will give the young Doctor in his teaching, they will do something else. They will show the attitude of the university toward the teaching function and will tend to remove that conviction that many young instructors have that it is negligible as compared with productive scholarship and that efficiency in it will gain neither promotion nor increase in salary. No university is likely to take the position that it is on the same level as research ability of the first order. But how many research men of the first order are there? Better a good teacher than a poor research man! We are now turning out too many of the latter type and too few of the former.

CHAPTER VI

THE REORGANIZATION OF POSTGRADUATE WORK FOR PROSPECTIVE COLLEGE TEACHERS

HENRY SUZZALLO

All work on the post-baccalaureate level is now called graduate work. Graduate work had originally a distinctive meaning, that of training in scholarly and scientific technique for the purposes of a contributive or productive intellectual career. Now professional schools upon a postgraduate level are called graduate schools of business or law or medicine when their purposes are merely to serve professional practice. Students with the degree of Bachelor of Arts or Science are called graduate students and given graduate status when they are merely studying for cultural, avocational, pre-professional, or professional purposes.

Our system of granting academic status on the basis of time and credits has led us into this incongruous situation. We have sought to protect ourselves by differentiating between admission to graduate status and admission to candidacy for a particular degree in a special subject. This is faint-hearted dealing with the situation now before us. We have not thought the problem through to its fundamental elements.

The postgraduate level of education needs a complete reconstruction as concerns admissions, differentiated handling of students, and the whole system of standardizing and granting of advanced degrees. Nothing less will save the efficiency of our training for research—our original academic ambition—and at the same time give us effectiveness in serving the new, useful, and additional social purposes now imposed on post-baccalaureate education.

Mere random conversations with postgraduate registrants will indicate that an increasing proportion of them are not primarily interested in academic research or scholarly investigation as an active life-career. The past ten or fifteen years have continuously diluted the graduate school body with persons whose life-objective is sec-

ondary-school teaching or some other kind of pre-professional or professional training, or whose immediate object is more cultural training of the previous undergraduate type.

One may confirm this fact by studying the after-careers of the Doctors of Philosophy. It is clear that even this highly selected group is not homogeneous. A high percentage quickly cease to have any energetic interest in research activities. They have acquired the degree of Doctor of Philosophy for some other purpose than that of fitting themselves for academic discovery. Often the motive is to gain personal prestige from borrowed plumage. Of course, one must allow for those who change their intentions or who seize the other opportunities which life provides.

Likewise, one must not assume that all Doctors of Philosophy intend to teach in colleges and universities. In numerous cases they enter industry in a scientific capacity, go into government bureaus, or devote themselves to administrative careers where scientific inquiry needs to be understood.

We have long assumed theoretically that the graduate school serves a homogeneous purpose, when, in fact, it does not. Hence, we have made a few degrees cover many diverse educational purposes. Our few traditional graduate degrees are losing their precise significance, particularly the doctorate in philosophy. An administration which attempts to impose uniformly the requirements for one purpose on students pursuing many different ends is unfair either to academic standards and dignity or to a large number of postgraduate students. In the end the effects on both are unsatisfactory.

The prime requisite in the proper reorganization of study on the postgraduate level is to recognize that the whole student group is no longer even approximately homogeneous. The conception that one set of requirements will serve, and one runway of training suffice for all, is a fallacious assumption clearly indicated by the recent experiences of any professor in the graduate school who will pause long enough to analyze them.

The postgraduate-school level needs a multiple rather than a single organization to care for the present students enrolled. Homogeneity may thus be restored within each of several groups. It cannot be restored to the postgraduate student body as a whole. Dif-

ferentiation in treatment of each group logically follows. Teachers wishing more academic and professional training for high-school instruction should be handled as a group with fairly similar educational intentions and needs. Their presence under present conditions of administration has been damaging to the work of the true graduate school for research, as everyone knows.

There are also present on the postgraduate level students whose interest is largely cultural. They are aiming to extend the undergraduate training of the senior college. They seldom pursue their additional studies beyond one year or the period that leads to a Master's degree.

Again, there are still other Bachelors of Arts who are "picking and choosing" among the graduate-school offerings to find useful courses which will give them a better foundation or facilitate their training for some occupation in life not represented by a definitely organized professional school. These constitute a pre-professional or professional group of varied sort, most difficult to classify. To handle them by existing traditional regulations for advanced degrees, already greatly blunted by inevitable concessions, is to do violence to their worthy purposes and at the same time to interfere in one way or another with the original purposes of the doctorate.

These various groups of students need to be segregated from prospective college and university teachers, and even more do the latter need to be separated from the former. Most of the former require a certain breadth of training; while all of the latter, if their previous preparation has been sound, need, after the first year, a rather intensive specialization in subject matter and investigative technique.

Standards for admission, course requirements for study, and standards for the granting of different advanced degrees should be set up for each group rather than for the mass as a whole. Some new advanced degrees will need to be provided. The present ones will not honestly stretch over all the people we are permitting to enter candidacy for them. The system of uniform degrees and uniform regulations is now stretched to the breaking-point. The services now actually being rendered in fact, or attempted, need analysis and administrative rearrangement. In no other way can we hope to clarify our situation by sound reorganization into differentiated

groups under several systems of regulations, each set of which is approximately uniform in its applications only to a single group.

At least for some time to come, during what seems to be a necessary transition period, the first year of postgraduate work for any purpose needs to be freed of iron-clad regulations. The first year, at least for a while, should be regarded as a transition year, one of academic repairs and new preliminary preparation. I am doubtful that the Master's degree should be generally given to those who have had only one year of study beyond the baccalaureate degree. It is now too frequently so granted.

One large argument (and there are others equally cogent) is that most first-year postgraduate students are not really ready to begin at once the further or advanced study they wish to pursue.

On this point, the evidences are fairly clear. Students enter the so-called "graduate school" with more varied preparation than they enter college. The prescriptions and permissible elections during the four years' course are exceedingly varied when one considers the range of institutions, large and small, conservative and liberal, endowed and state, independent and university-connected, accredited and unaccredited, from which postgraduate students come.

On the face of the regulations, it might seem that only students from unaccredited colleges are treated as unprepared. But in practice we are much wiser. Strictly undergraduate courses are much taken in remedy of inadequate college programs of study. Courses open to both Seniors and graduates, too generously provided, serve the needs of those already in graduate status more than they do brilliant Seniors. Graduate students are allowed to substitute additional courses for the Master's thesis—a significant concession to the present academic situation. All these and other facts affirm the contention that many students are not really ready to begin advanced study in the subject they have elected.

The student that enters the postgraduate school is more serious and more definitely purposed than the one that graduated from the college. Graduation and an actual or potential life-work stock him with resolution to choose the next step for its intrinsic worth. He is freer from the motives which are akin to those which lured him into

college life in all its manifestations. Students, too, may be sent to college, but they more largely choose to go to a graduate school.

Again, graduate students often shift their choice of fields away from the projecting line of their preparation. They need academic repairs before going on. Too often they try to meet this necessity at the same time that they are trying to meet the normal one-year regulations for the Master's degree. In such cases, the outcome is not a happy one for anyone concerned. The leisure for thought, so important to the intellectual life, often seems less present in this first graduate year than in any of the years of much-criticized college life. Observation of, and discussion with, such students reveals that first-year graduate students are usually sadly crowded in an institution where standards are conscientiously maintained.

When a student enters his first postgraduate year, he needs to know his purpose and to make it known. In terms of that purpose, his academic preparation and his ability need to be diagnosed. Then special, individualized prescription is necessary, first, by way of academic repairs and additional preparation, and, second, by way of setting him on a clear road to his goal.

Increased language facility, better foundations in his subject, more training in related fields, should be laid out for the first year's work where needed. Nothing is more pathetic than to see these primary tasks intruding into the student's time during his second and third years of graduate-school training. In this situation, we need to be more exacting and relentless at the very beginning. And we need to rid ourselves of the presumption that one year's study and accumulated course credit have anything important to do with the granting of advanced degrees. Then, at least, we shall have sufficient flexibility to deal justly with students and their serious intentions.

In the reform of the graduate school, it would be wise if we could put scholarly-intentioned men and women under scholarly-accomplished men and women, instead of under mere regulations.

The faculties of colleges and graduate schools where they exist together have the same teachers serving two purposes. They carry their dominant habits back and forth. College methods are taken up into the graduate school, and vice versa. We ought to be as

gravely concerned with what is carried up without fitness as with what is carried down. Most academic rules aim primarily at policing the work of poor students and protecting the institution's reputation against lax professors, and not at facilitating the labors of the best students and the ablest professors. Here the methods of regulating young undergraduates have crept up into the management of graduate students with obvious disaster to *esprit*. We may have other ways of measuring the quality of a student's work; but the quantity of credit we give him is still determined by the number of hours or semesters a professor works in the presence of the class —and the class is not always present in several senses.

One thing is certain. As our most respected colleges are encouraging more independent study in place of class instruction, the graduate schools cannot do less. They must do more in this direction—and a very great deal more. Their whole dominant aim in theory is, and in fact ought to be, that of fostering independent study. Courses attended might be merely registered. This will serve the convenient purposes of record. But no marks or credits should be given to be accumulated and added together so as to constitute a claim to a degree.

The best departments in the best colleges now utilize the comprehensive examination as a final academic test of accomplishment. All divisions and departments of all graduate schools should do so. Here again, they cannot do less but must do more. Our new written objective examinations supplement our old facilities for testing the thoughtful possession of knowledge and the power to summon it to the solution of a problem or the elucidation of a theme. With oral examinations, new-type tests, conferences, reports, essays, and theses, we have varied and enriched means for discovering the genuine working qualities of a graduate student's mind. It is better to take a direct look at it than at the registrar's continuous, detailed record cards.

As I have watched the work of graduate students, I am too often impressed with the fact that work assigned them is too easy or too hard. Some courses merely assign lessons or points. Others call for a term paper, thesis, or dissertation. There needs to be better grading of the graduate student's tasks from the first year to the last.

The youngest students do not get into problems of appropriate size soon enough. The older students at work on the student's *magnum opus*—the Doctor's dissertation—are pestered with the distractions of term papers or studies in their minor subjects or auxiliary courses. Here is a fertile field for reform. Something ought to be done about it.

Of course one does not begin to acquire scientific curiosity suddenly—or at least one cannot. Scientific curiosity is mere human curiosity of the six-year-old variety—unblunted and undiscouraged, richly matured with organized knowledge and greatly empowered by new or constantly refined techniques. The inquiring mind should have been developing all through school and college. It becomes descriptively a research mind only by fact of academic geography. When it crosses the line between what people have already known and what no one has hitherto known, then we call it a research mind, a productive or contributive mind, as though it were psychologically something different when, in fact, it is not.

If we can keep minds thinking vigorously, add academic knowledge and scientific techniques, enlarge the scope of problems assigned, and gradually complicate the difficulties to be met, any first-class six-year-old mind may ultimately become a research mind. But the process requires some grading in things to be done so that problems are not continuously so small that there is nothing at which to work hard, or continuously so large that bafflement, failure, and discouragement turn curiosity away from the intellectual life.

Of course, when I speak of training in investigation, I do not mean to leave students on the reading, counting, or collecting level of thought. Too many get no further than this. That critical interpretation of facts on the basis of the larger related view, which comes with the acquisition of methods of organization and presentation of knowledge accurately acquired, must be included. Some extensive observation seems to justify a change in our practice just here. Graduate students seem to show less capacity for organizing and presenting the results of their work than we have a right to expect. Larger implications, important to constructive knowledge, are thus missed; and when this is habitually done for lack of higher

critical training, scholarship may become a sterile collecting of facts.

It might be well, too, to inquire just what techniques of investigation individual students acquire, and how they acquire them. Those who spend only a year in graduate school do not acquire many. Simple but thorough bibliographical work is still a colossal task to them—and it leads only as far as secondary sources of knowledge. A test on bibliographical capacity as part of an examination for entrance to the postgraduate school would eliminate many students or condition their entrance until the defect could be overcome.

Most students learn to manipulate the tools of investigation when they are material, if they have access to them, particularly in laboratories. But the imaginative ingenuity of knowing when and how to use them on a problem in acquiring facts, generalizations, and interpretations is not so readily given or acquired. For the most part, it seems that this capacity is induced in students through companionship with able minds working on their own intellectual problems.

Quite regardless of the usefulness of basic and informative courses, which give desirable outlook and absolutely necessary working knowledge and critical ability, the specialist at work in his class on some problem of major interest to him still seems to be one of the largest assets to the graduate student in the acquisition of thinking techniques. A substitute for it hardly exists. Even the pro-seminar or seminar of problem solving and reporting under the mind of a critical seminar master cannot displace the suggestive power of a master mind at work in his own field. Relatively, there are not enough such courses. Once they were more often offered and taken. They should be restored.

One cannot escape the feeling that in these days too many graduate students are restricted in their technical approaches to their problems. How numerous are those who can do things only statistically! A restricted range of seminars may cause this narrowness. Every method has its highly specialized value. But each needs supplementation. More range in thinking techniques needs to be provided. Historical, or genetic, and comparative methods are ignored in some of the modern social science fields. Others ignore a more detailed and accurate objective and statistical approach. Again,

whole collections of tables and graphs have acquired no real significance for lack of capacity for analytical and critical thinking, the ability to see parts and wholes in significant and weighted relationships. More versatility in the capacity to use various investigative techniques would greatly aid in the training of the teaching scholar.

In this paper, I have merely suggested and not always discussed a few phases of postgraduate work for prospective college teachers which need reconstruction. They chiefly concern organization and administration, and the subtle domain of training in the procedural techniques of thinking. The aspects of academic and professional content I have omitted, for they have already been discussed in an earlier analysis presented to this institute.

CHAPTER VII

THE ENLISTMENT OF PROSPECTIVE COLLEGE TEACHERS

ERNEST H. WILKINS

The enlistment of prospective college teachers is far too important a matter to leave to chance or to the undirected initiative of college students.

Most of us are, or have been, college teachers; and that experience—if yours has been like mine—has taught us to believe that the profession of college teaching is second to none in its necessity for the common welfare, and to know of our own knowledge that it is rich in satisfactions. These positions I am assuming, and am assuming without fear of disagreement.

If, then, the profession of college teaching is necessary for the common welfare, it is obviously of prime importance that there should come steadily into it, from year to year, young men and women of high ability; and if, in addition to being necessary, it is rich in satisfactions, we need not hesitate to draw such men and women into it, even though we know that, like every other profession, it imposes limitation and sacrifice.

For those of us who are now engaged in administrative work, the question is not merely general: it is practical and immediate as well. For we know, every one of us, I suppose, that good college teachers are hard to find and hard to keep. The first duty of a college president is the maintenance of a staff of good teachers; and the most active phase of this duty is the filling of vacancies. I, for one, can bear witness to the fact that good teachers are very hard to get, whether we turn to men already established or to youngsters fresh from the graduate school. The supply of good college teachers does not begin to be as large as it should be. We should therefore seek to bring into the profession far more college students of high potential teaching ability than are now entering it.

We should be better able to take constructive steps in this matter

if we had more exact knowledge of the facts. I propose, therefore, in the first instance, a factual inquiry, which might well be undertaken by individual colleges, with a pooling of results. The three things I should like to find out with regard to the graduates of a given college are, first, the actual number of graduates of each of the last ten years engaged in or preparing for college teaching, and the percentage of the class represented by this number; second, the actual number of graduates in the upper quarter of each class engaged in or preparing for college teaching, and the percentage of those in the upper quarter of the class represented by this number; and third, the actual average college rank, both in terms of the grading system used by the college and in terms of relative numerical position in the class, of graduates of each class who are engaged in or preparing for college teaching.

I expect to make this proposal definitely at the next annual meeting of the Association of American Colleges. Meanwhile, if any colleges here represented are disposed to experiment with such lines of inquiry, I am sure that the results obtained would be significant and helpful.

But while we can presumably work to better advantage after we have the results of such an inquiry, we do not need to wait for such results to start a direct attack on the problem of the enlistment of college teachers.

The enlistment of college teachers means, in the main, the enlistment of college students, before they graduate from college, for the career of college teaching. The graduate schools, to be sure, are not without their problems in this connection, and to these problems I shall refer briefly at the very end of my talk; but most students in graduate schools have decided upon their professional career, and the enlistment problem is, in the main, as I have said, the problem of enlisting undergraduates.

How shall we do this? The technique of the army and navy will hardly serve. Pictorial posters placed about the campus, with instructors detached for recruiting duty, pacing up and down in academic costume, would attract more missiles than missionaries. There are certain specific plans and devices, I think, which may be properly and effectively employed, and I shall mention these plans

and devices before I am through; but even these constitute only a secondary resource.

The only answer of primary and major significance is so familiar and so obvious that it is already in all your minds: it is simply to make the teaching profession so attractive that the ablest students will naturally be drawn to enlist in it. It must *be* attractive, and it must *seem* attractive. It cannot be made to *seem* attractive unless it *is* attractive; for the profession of college teaching is under direct inspection by the college student day after day for four years, and you cannot possibly fool him into thinking that it is something which it is not. If it is attractive, he will know it; and if it is unattractive, he will know that.

The status of this profession with regard to vocational choice is different from that of any other profession. You can tell a student what you please about law, or medicine, or business, and if he believes you to speak with authority he will listen with open mind, for these professions are not largely known to him. But you cannot tell him much about the profession of college teaching. It is no use asserting that the pudding is good. He knows how it tastes. In so far, therefore, as the profession of college teaching is attractive, it has an advantage over other professions in the competition for student approval; in so far as it is unattractive, it is at a disadvantage as compared with other professions.

Our task is, then, to correct, not merely in appearance but in fact, those features of the academic life which are relatively unattractive, and to enhance those features of the academic life which are relatively attractive.

To discuss systematically the program I have just suggested would take us far beyond the bounds of our time and of our immediate subject into the whole range of our central administrative problems. Such a survey we cannot undertake; but I venture to dwell for a little while on those aspects of college teaching which seem to me to determine, most directly, the strength or the weakness of its vocational appeal.

A college man facing the choice of a profession seeks in that profession, in the main, I think, six qualities: first, that it be highly interesting in itself; second, that the human relationships involved

be stimulating and potentially cordial; third, that the work afford chance for freedom of thought and speech and for initiative; fourth, that it afford chance for distinction; fifth, that it afford chance for service; and sixth, that it give promise of financial competence as a basis for a happy family life. If college teaching is to appeal to the undergraduate, it must be such as to appeal in these six respects.

It must be highly interesting to those who carry it on. The teacher who teaches lifelessly and without originality—even though he teach accurately and conscientiously—is guilty of a double wrong: he is lessening the immediate understanding and achievement of the students who sit before him, and he is turning them aside from teaching as a profession. Who wants to do all his life a thing which those who do it do not seem really to care about? On the other hand, the teacher who is possessed with the fascination of his theme, who brings some eager contribution of his own to the day's work, converts not only to a subject but to a profession.

Interest in the subject matter of teaching means, of course, interest in scholarship. And the fundamental reason why the harvest of good college teachers is small is because the collegiate experience of the American undergraduate is not such as to exalt scholarship and the life of scholarship in his eyes.

This is the main thesis of Dean Woodbridge in his address "The Supply of Adequately Trained University Teachers," which is the most cogent discussion of our subject with which I am familiar. Dean Woodbridge says:

> If we . . . . ask why it is that the supply of really able [teachers] . . . . is so inadequate, the answer is, I think, simple. Our system of education is not intended to produce them. In other words, in education our attention has not been given significantly to scholarship, but to something else, namely, to industry and alertness. Our system is designed to produce not a certain quality of mind, but a certain type of person, not a scholar who loves learning, but an American, alert and industrious, fitted to meet the demands of American life. . . . . We have done reasonably well the thing we have been trying to do. . . . . The state of the country's scholarship and learning is pretty much what we should expect it to be from the character of the education we have been giving to our people. Aiming at industry and alertness, we have largely succeeded in attaining them, so that the product of our education is on the average a person adaptable, quick, resourceful and dependable. But aiming at these virtues so predominantly, we have produced scholars only rarely and incidentally. So I

repeat that the scarcity of adequately trained university teachers is due fundamentally to the fact that our system of education is not intended to produce them.

It is, then, our part as administrators to foster scholarly enthusiasm and originality in our faculties, and so to select our students, and so to order their collegiate experience, that the keen and durable satisfactions of scholarship may stand forth clearly in their sight.

The college student asks also of his to-be-chosen profession that the human relationships involved be stimulating and potentially cordial. The primary professional human relationships of the teacher, and those which the student continuously observes, are, of course, the teacher's relationships with his students. And the teacher, by the character of those relationships, draws men toward his own profession or repels them therefrom. The repeated sight of a man for whom students exist as a passive class rather than as responsive individuals tends to deter any youth from entering a career which appears to be cold and impersonal in its basic relationship. Acquaintance with a teacher who genuinely enjoys companionship with students in and out of the classroom not only has its unfailing immediate effect but serves, beyond that, to encourage enlistment in a profession which to some men, at least, brings such obvious friendly satisfaction.

It is, then, our part as administrators to encourage that type of teaching which invites student responsiveness, and to facilitate, in every possible way, the companionship of faculty and students.

In the third place, the teaching profession, if it is to appeal to the undergraduate, must afford chance for freedom of thought and speech and for initiative. If the student believes that his teachers are cowed by intellectual or religious tyranny of any sort, if the profession, as he sees it, is darkened by private or by statutory obscurantism, he will naturally turn his steps in some other direction. If, on the other hand, his teachers speak in an atmosphere of liberalism, he will be moved to cast his lot with them. Similarly, he will shun a profession which seems to him marked by regimentation and by conformity to tradition; and he will turn to one which appears to respect and to welcome inventive suggestion and experimental activity.

It is, then, our part as administrators to maintain an atmosphere of academic freedom, and to give cordial and courteous consideration to educational initiative on the part of any faculty member or any faculty group.

In the fourth place, the teaching profession must offer the chance for distinction. This may be the inner and absolute distinction of fine teaching personality, which no student body ever fails to recognize; or it may be distinction of a more visible and formal nature. Any publication which wins a place on library shelves or in the college bookstore makes its impression on student readers. There are many types of academic recognition which quickly permeate student consciousness, as, for instance, special support in a teaching project or in co-operative research; or the chairmanship of a joint faculty-student committee; or a public address with administrative introduction; or administrative commendation of some other sort. Our highest formal honor, the honorary degree, might well be more often bestowed for distinguished success in the profession in whose values we so profoundly believe. It is a good thing, also, when professors who have won the right to be heard step out from the cloister into the arena. John Dewey—to take but a single instance—in his exercise of political influence does more than say his weighty say: he enhances the dignity of his profession in the eyes of thousands of students.

It is, then, our part as administrators constantly, and in every possible way, to accord distinction to those of our teaching staff who merit it; to manifest interest in significant faculty publications while in process and when completed; and to encourage justifiable and dignified participation of faculty members in public life.

In the fifth place, the teaching profession must clearly offer chance for service. The idea of service has, I think, been overworked in public addresses to students in recent years, and they do not welcome discussions of this theme. Indeed, if I were to draw up a list of "don'ts" for visiting chapel speakers, I should include, I think, the caution: "Don't talk about service." But despite this oratorical taboo, I am convinced that the instinct for service is just as deeply rooted and just as vigorous as ever in student consciousness, and that in determining whether or not to enter a given pro-

fession students will be largely guided by its prospect of serviceableness. The college environment which would best convince the college student that the teaching profession offers a notable chance for service is obviously an environment in which college teaching is actually carried on in that spirit. That spirit vaunteth not itself; neither doth it analyze or promote itself. If it is genuine, it is deep, and quiet, and contagious.

In the sixth place, the teaching profession must give promise of financial competence as a basis for happy family life. I do not think that the typical college student has his eyes fixed upon the attainment of wealth as a major goal. I do think that he wishes reasonable assurance that if he makes good in his chosen work he will earn enough to support a family, with margin enough for some measure of social freedom. This means, in terms of the appeal of the teaching profession, that if the college student comes in contact with faculty homes which seem to him below his own standard of decency and contentment and pleasantness, he will tend to avoid the profession which they represent; and that if, on the contrary, he has access to faculty homes which have a family life—no matter how simple—marked by basic comfort and by happiness, illumined with the light of the mind and not untouched with beauty, he will be strongly drawn to membership in such a community.

I suspect that we have not generally or fully realized either the immediate educational significance of the faculty home or its power of influence for the student's later years. If any college president should ever be able to say: "The home of every member of my faculty is open to students, and there is no home which I am not unreservedly glad to have my students enter," then, indeed, might he claim for his college the name of Utopia. The making of such homes requires personal attitudes which we may perhaps encourage though not control; and it requires adequate salaries, the provision of which lies squarely within the field of our responsibility.

Essentially, as I have said, the problem of enlistment reduces itself to this: If the teaching profession seems attractive to the students who so closely and so constantly observe it, they will be drawn thereto—otherwise not; and it behooves us, therefore, to make the teaching profession, in very fact, more and more attractive.

To this, my familiar and my one major doctrine, I add four brief specific suggestions, of minor importance, bearing on the enlistment of students while they are still undergraduates.

The first is this: Many colleges offer courses, usually for the benefit of upperclassmen, which survey the several vocations. Such courses are sometimes regular credit courses, involving assigned readings, discussions, and perhaps field work; sometimes they are merely series of lectures by invited guests. My suggestion is simply that in any such course the profession of college teaching be adequately presented.

My second suggestion is that, from time to time, perhaps once in a student generation, some faculty member to whom the students listen gladly be asked, on an appropriate public occasion—on Honors Day, for instance—to set forth the values of the academic life.

My third suggestion is that at the period when major subjects are being chosen the advisers who are guiding the students in that choice be ready to suggest to them the possibility of college teaching as a career, and that some special canvass of the ablest men be made in this connection by dean or president.

My fourth suggestion is negative. It is that we are in honor bound to discourage from entering the profession any students who, though inclined to it, give no promise of becoming good teachers.

Thus far I have spoken of the enlistment of students while undergraduates. In brief conclusion I have a little to say of the responsibilities of the graduate school in this connection.

First of all, and in general, the experience of graduate school life, as the first stage in the teacher's career, should be made attractive, in fact and in appearance. Provision of fellowships and scholarships is already generous, but that is not enough. The entire graduate-school program needs humanization. It is typically, though not absolutely true, that while undergraduates are housed in college buildings, graduate students are left to find scattered shelters where they may, with the result that they lack the relative comfort, the companionship, and the sense of being a recognized part of the institution which go with undergraduate dormitory life. Furthermore, while it is true that the undergraduate colleges suffer today from too much social life, too much extra-curricular activity, and too much

athletics, it is equally true that the graduate school suffers today from too little social life, too little extra-curricular activity, and too little athletics. The idea that a student, on receiving a Bachelor's degree, leaves behind him the need of pleasurable association with his fellows, fondness for dramatic or musical diversion, and zest in outdoor competitive games, is no less than absurd. Loneliness, narrowness of interest, and poor physique are all too often characteristic of the graduate student.

The nature of living conditions and conditions of companionship in the graduate school is important, not merely because the existence of good or bad conditions is of course reported back by the graduate students to the colleges from which they come, but because those conditions are daily displayed before the undergraduate students of the university in question. If you ask the undergraduate student of a university whether he is going into college teaching, his answer, if the graduate conditions which he observes are ideal, might well be an enthusiastic affirmative; whereas, if the conditions are such as in fact they all too often are, his answer might be briefly and sharply negative.

When the prospective teacher has once arrived in the graduate school, the authorities of that school have, of course, the general responsibility of holding him true to his choice, by the reinforcement of the values which led him to make that choice. If, however, the graduate-school authorities have sound reason to think that a given student, for lack of scholarly ability, or for any other cause, would not make a good college teacher, they owe it to the colleges which take their product to discourage such a person from entering the profession.

In the departments of the sciences it may not infrequently become the duty of the departmental head, if he is himself convinced of the values of college teaching, to help a good prospective teacher resist the appeal of commercial or industrial opportunity. It is, of course, highly desirable that such positions should be well filled—but it is not desirable that their filling should unduly deplete the stock of good future professors in the field of science.

Finally, the graduate student's esteem for the profession of teaching will of course be enhanced—and thereby, through him, the es-

teem of younger men whom he may influence—when the graduate school itself more fully recognizes the implication of the facts that its students are, in general, preparing for college teaching, and that college teaching is indeed a profession—a profession which glories centrally and rightly in that scholarship which the graduate schools have exalted, and should ever exalt, but a profession so beset with professional difficulties, so hampered by professional needs, so critically important in its professional responsibilities, and so rich in its professional opportunities that its novices deserve, and will in service and in gratitude repay, the development of a plan of training which shall contemplate the fulness of the professional experience to which they go.

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CHAPTER VIII

SURVEY OF CURRENT METHODS IN TRAINING PROSPECTIVE COLLEGE TEACHERS

WILLIAM S. GRAY

In order to secure information concerning current methods in training prospective college teachers, the deans of graduate schools in thirty leading universities of the country were asked to prepare a brief report of the methods used in their respective institutions, which could be published over their names in the *Proceedings* of the Institute. It was further suggested in the request that a discussion of the following topics would be of special interest: (*a*) the general program in preparing prospective college teachers, (*b*) the specific methods adopted by various departments, (*c*) experiments under way in college teaching which would quicken the interests of prospective college teachers in professional problems, and (*d*) changes or improvements in the methods used in training college teachers which could be made to advantage. Replies were received from twenty-seven institutions. In twelve cases, only brief statements were submitted relating to the procedures adopted in given institutions or explaining why reports could not be prepared at this time. In fifteen cases, carefully prepared reports were presented, which appear in the Appendix.

The reports revealed widely different attitudes toward the problem of training college teachers. For example, Dean Wannamaker of Duke University states that the most important step is to secure capable men as graduate students. The following statements quoted from the graduate bulletin of that institution for 1927–28 describes this view more fully:

> The Duke University Graduate School will endeavor to discover among the candidates for advanced degrees those students who show promise of becoming good teachers. Provision will be made in the various departments for the consideration and discussion of problems of teaching. Graduate students who expect to teach will be given opportunity to gain practical experience under the

supervision of successful teachers. The Graduate School will keep such records as will enable it to recommend with confidence students who are likely to prove efficient as teachers.

Dean Chase of Harvard believes that the opportunity afforded graduate students to observe the methods of successful teachers and to serve as assistants in departments, even with little or no supervision, is of great value. Dean Payne of the University of Indiana places great confidence in scholarly attainments. By training students in research and by teaching them to work, to think, and to evaluate independently, they acquire, he states, scholarly attitudes that effect their activities both as students and as teachers. He would strengthen rather than lessen the research requirement. "If other requirements are deemed necessary, they should be in addition to the present requirement." President Ames of Johns Hopkins University is of the opinion that students should have both theoretical instruction and practice in teaching. "The quantity and quality of such theory and practice should be determined by the students' major department." Dean Daniels of the University of Illinois believes that problems relating to the better training of college teachers can be solved without radical changes. He reports that his staff does not believe that the proportion of time devoted to research is excessive. It approves the plan of apprentice teaching but is opposed to the introduction of specific courses on college teaching, favoring rather the organization of conferences and discussions relating to such problems.

Dean Sheldon of the University of Oregon expressed the belief that the solution of the problem lies in the better organization of the work and the training of graduate assistants. "To work out such a plan, it is necessary to find one man in each department who is himself a good teacher, who is interested in the problem, and who will give to students the benefit of his coaching and time." Dean McPherson of Ohio State University outlines a definite program of activities adopted by that institution which reflects a very constructive, progressive attitude. More detailed reference will be made later to phases of that program. Dean Trowbridge of Princeton states that "emphasis should be placed by professors with whom graduate students work, on the necessity of learning how to teach—

not necessarily by taking courses in pedagogy, but at any rate by self-instruction through reading and practical experience." Dean Cross of Yale University points out that the primary function of the Yale Graduate School is that of assisting students to acquire a thorough knowledge of their fields of study and to explore farther into them than has been done thus far. He adds, however, that specific preparation for teaching is also essential, and describes briefly an experiment looking toward the improvement of instruction in that connection.

The widely divergent views illustrated in the foregoing statements prevail also among departments within a given institution. This fact was emphasized by Dean McBain of Columbia University, who concluded after a careful inquiry among the heads of departments of that institution that the practices are so various and the attitudes of the departments so different that it is impossible to digest in any adequate fashion the reports submitted.

The training programs outlined by various institutions differ as radically as their views concerning the general problems involved. For example, one institution reported that it has made very little progress in training college teachers. The report from Columbia University indicates that no general program for preparing college teachers has been organized. The report from Harvard states that "no organized effort has yet been made to provide specific training for prospective college teachers or to supervise the work of young instructors." On the other hand, several institutions described definite programs of activities looking toward the better selection and training of college teachers. The following statement by Dean Seashore of the University of Iowa is suggestive:

> While the University of Iowa does not have any very formal specific requirements for professional training and teaching on the part of candidates for the doctorate, the faculty is thoroughly alive to the needs of the situation and meets it with more or less effectiveness by the following considerations:
>
> 1. Most of our graduate students come in with a certification in education, which means that they have had an elementary course in psychology and certain courses in education.
>
> 2. The Department of Education offers a seminar during the first semester. This seminar is an all-evening affair and aims to survey the principal points of

professional interest in education as represented by members of the education staff and others who are invited in for specific topics.

3. The faculty urges each department to conduct a department seminar during the second semester to dovetail with the one just described.

4. As in other universities, all the departments make rather free use of graduate assistants, who in this way gain apprenticeship in teaching the departmental subject under favorable conditions.

5. The graduate college requires a physical examination for all graduate students, and in this examination special attention is given to the discovery of impediments or psychopathic tendencies which indicate need of attention. If in such an examination a psychopathic personality or other form of inferiority should be revealed, such a person would be discouraged from entering upon the teaching profession. I think there is more and more tendency in all departments to take personality into account in rating the progress of advanced students.

6. We are this year experimenting with the requirement that all candidates who expect to teach shall have an interview with a representative of the Speech Department to determine whether or not he has any impediment of speech or is in need of coaching for the purpose of training in the ability to speak before a class. The matter is being handled informally through the dean's office, and the speech examiner will report to what extent the treatment indicated has been followed and with what success.

An analysis of the various reports submitted indicated that three general methods are used more widely today than any others in training prospective college teachers in the professional aspects of their future work, namely, the provision of practical teaching experience to fellows and assistants, the organization of general professional and special departmental courses, and the conduct of experiments relating to college teaching problems. Each of these methods will now be described more fully, and their significance considered.

The provision of practical teaching experience for fellows and assistants was reported more frequently than any other means of training prospective college teachers. The character of the activities in which assistants engage and the nature of the supervision provided differ widely. In Harvard University, for example, there is little effort on the part of members of the faculty to supervise the teaching done by assistants in different departments. In Yale University a certain number of students are appointed each year as readers of papers in large undergraduate courses.

They are required to attend these courses, and thus secure opportunity to observe how various subjects are taught. In the natural sciences more than a hundred graduate students are engaged as assistants in undergraduate courses, under the direction of professors of the first rank, from whom they receive direct instruction in the methods of teaching.

Thus, competent graduate students in Yale may learn the art of teaching through observation and directed practice.

Dean Trowbridge of Princeton University is inclined to question the value of the training received by assistants:

These students get some practical experience, though the question as to how valuable this is to them and the question as to how wise this practice may be for the undergraduate instruction is too large to raise in a report of a few hundred words.

Dean Payne of the University of Indiana believes that graduate students who serve as assistants should be far better supervised than is ordinarily true today. This can be done best, he states, by a series of conferences with someone in the department who is recognized as a good teacher. Dean Upson of the University of Nebraska reports that a very large proportion of the graduate students serve as teaching-scholars, fellows, or assistants in the various departments:

The members of the Nebraska faculty who express themselves are almost unanimously of the opinion that these students receive training which is of great value in preparing them to become teachers. Most of the service rendered by these students is in the form of laboratory instruction, the giving of quizzes, and the like. This work is usually conducted under the close supervision of regular members of the teaching staff. For example, in the Department of Chemistry, all students are required to attend the regular lectures of the course in which they are assisting for the first time. In addition, the teacher in charge of the course meets with all instructors and assistants in his division once a week for a detailed discussion of the teaching problems of the course.

The foregoing examples show clearly that whereas many practical contacts with teaching situations are provided for fellows and assistants, methods of making those contacts of greatest value to students have not been universally adopted.

The provision of professional courses for prospective college teachers is becoming somewhat general. However, the attitude toward such courses expressed in the reports varied from enthusi-

asm to open hostility. An interesting and suggestive sequence of courses was reported by Dean Sheldon of the University of Oregon:

> During the Fall Quarter there is a course offered on "Recent Movements in College Teaching and Organization." This is taken by graduate students. An effort is made to familiarize them with the newer movements of the field through reading and lectures. Each student reads through one or two surveys and reviews a number of books of the type of Richardson's *A Study of the Liberal College*. During the Winter Quarter the work is continued through a similar course which devotes itself entirely to objective measurements. . . . .

The effort here is simply to give the students an intelligent understanding of what this type of procedure means in higher education.

> In the Spring Quarter an attempt is made by some of the departments to follow up the training which they give their graduate assistants. We have something like sixty-two graduate assistants here who are virtually fellows. They all assist as paper-readers, quiz-directors, etc. A few of the departments give systematic attention to training these men. The departments which thus far have done the most valuable work are physics and chemistry. There is also some effort made in psychology and education.

The Ohio State University provides a series of general courses including two which relate to college teaching. These are taken by graduate students who expect to secure positions on the instructional staffs of colleges, irrespective of their field of specialization. The titles of these courses are: "Foundations of Contemporary Civilization," "Development of Modern Science," "Science Methods and Ideals," "Epochs in the History of Thought," "Survey of Higher Education for College Teachers," and "College Teaching." Dean Daniels of the University of Illinois states that the executive faculty of the graduate school of that institution is of the opinion that general courses in education should not be required of graduate students. They favor, however, the introduction of a plan for conferences and discussions about college teaching to be conducted by a member of the faculty of the College of Education or someone who is equipped for such work. Dean Wannamaker of Duke University reports a similar plan. According to his statement,

> Talks on teaching are made to groups of graduate students by faculty members who are known for their good teaching. The prospective teachers are also encouraged to visit classes in other departments and observe the work of men who have become known as the outstanding teachers of the undergraduate college.

Dean Wannamaker questions, however, the value of pedagogical courses to help beyond a limited extent in improving college teaching.

Several institutions have developed or are experimenting with courses which deal with problems of teaching within departments or fields. For example, Clark University has established a special chair entitled "Geography in Education." Through this agency students who go into teaching make a special study of the problems associated with the selection, organization, and presentation of subject matter; gain an understanding of the learning processes involved; and acquire a professional point of view. Dean Cross of Yale University reports that as an experiment for next year "a member of the staff in education and a member of the staff in chemistry plan to conduct a joint seminar for the discussion of the specific problems that confront instructors in chemistry with a view to the extension of the project to other subjects if the *liaison* in this instance proves successful." Several institutions, of which the University of Illinois is an example, state that courses in the teaching of various subjects, such as agriculture, botany, chemistry, English, Germanic languages, history, economics, Latin, mathematics, music, and Romance languages, have been given in their institutions for several years. Whereas these courses are intended primarily for undergraduate students in their Senior years who expect to teach in high schools, nevertheless, they are frequently elected without credit by graduate students who plan to teach in colleges and universities.

The value of courses dealing with the problems of teaching special subjects has been seriously questioned in some institutions. I quote here the statement of the chairman of the history department in one institution:

> So far as our students are concerned, they are being trained by the apprentice system, which to my mind is the very best that can be devised for that purpose. Practically all of them who take the A.M., and certainly all who take the Ph.D., have been assistants at some time or other. They have conducted quiz sections in that capacity, made out examinations, graded papers, conferred with the students, and, at times, conducted classes. More than that, they have sat through classes, from the introductory courses on up; and if they have any sense at all they have recognized that some courses are "gotten across" and others are

not, and have tried to analyze the reasons. I am confident that for four-fifths of the students that is all the training necessary and that this number makes very good teachers, as good as their knowledge of the subject matter allows. The other one-fifth can never be made good teachers, by anybody or by any means. We would not insult the intelligent four-fifths by making them attend a formal course on "How To Teach History." The trouble is that the secondary schools and colleges raise all the bother about the *chance* poor teacher. The likelihood is that such a teacher was never recommended by this department.

The dean who reported this quotation hastened to add that many departments believe that some specific training should be required of all graduate students who plan to follow a teaching career.

Experience has taught that one of the most effective ways of cultivating an inquiring attitude toward the problems in any field is to study in an atmosphere of constructive discussion and experimentation relating to those problems. This is particularly true with respect to the problems of college teaching. To the extent that students attend institutions where the problems of college organization, curriculum, and teaching are under constant investigation, just to that extent will they carry into their future work a constructive, critical attitude toward college problems. The reports which were submitted supply only a limited number of examples of experimentation relating to college teaching. The most pretentious list accompanied the report from the University of Oregon. The general nature of the problems reported is suggested by the statements that follow:

Experiment with entrance tests in English for Freshmen.

Experiment in student segregation in the social science orientation courses.

Experiment in predicting aptitude for the courses given in the School of Commerce.

Experiment to determine the extent to which laboratory drawings made by the students serve as an aid to achievement.

Experiment in improving the spelling ability of college students.

Experiments in methods of teaching in the field of economics.

An experiment in predicting aptitude for courses in journalism.

Value of examinations.

Experiment to determine the value of teaching Freshmen how to study, how to schedule their time, and so forth.

An experiment in problem project methods of teaching versus the lecture method.

The results of one of these experiments will be presented briefly for the purpose of interpretative comments. In the study to determine the extent to which laboratory drawings made by the students serve as an aid to achievement, one half the laboratory sections were given drawings to use in the laboratory while the other half of the laboratory sections made their own drawings. The result showed that students who made their own drawings were markedly handicapped as compared with students who were not required to make drawings. The results also showed that doing away with the making of laboratory drawings resulted in the saving of 42 per cent of the time formerly devoted to laboratory work. These results indicate the possibility of enriching the course or of reducing the number of hours of laboratory work and the number of laboratory assistants required. The discovery and discussion of such results by a department cannot fail to stimulate the thinking of students concerning the problems of college teaching and to cultivate an inquiring attitude of mind toward such problems which will carry over later into their own professional activities.

Duke University reports provision for students to participate in investigations of certain problems in the college field. In 1927–28 a seminar was offered entitled "Investigations of Study Habits." The students in this seminar worked out a special syllabus for the use of the class of weak Freshmen who were enrolled in the elementary educational psychology course. The seven students enrolled in the seminar also undertook to hold conferences and to do remedial work with the group of one hundred students assigned to the course. Similar work has been continued since 1927–28. All activities of the students are rigidly supervised by a member of the staff.

The discussion thus far suggests various methods which may be employed in training prospective college teachers. As a preliminary step, only those students should be encouraged to prepare for college teaching who give definite promise of success. The qualities which are essential, however, have never been clearly distinguished. Intensive studies are essential in this field before notable progress can be made in predicting the success of graduate students in college teaching. A second step which has been suggested is to provide

thorough training which will result in broad scholarship and ability to carry on research. There is little question concerning the desirability of these qualities. Serious questions, however, do arise as to the adequacy of the training now provided by graduate departments in attaining these goals. A third step is to provide training which acquaints students with current trends in American education and with specific problems involved in college teaching. Some institutions question the wisdom of this type of training. Others favor informal conferences and discussions as contrasted with a required course given by a specified department. A fourth step is to provide opportunity for the study of the problems of teaching given subjects. Chief responsibility for this type of training rests largely with the department involved. In some institutions, experiments involving the co-operation of a particular department and the department of education in giving such courses are in progress. A fifth step includes the setting-up of experiments relating to college teaching which will stimulate an attitude of inquiry and investigation concerning such matters on the part of students in training. A sixth step includes directed observation practice in teaching while serving in the capacity of a fellow, an assistant, an apprentice, or a student teacher. The conditions under which such teaching should be done and the techniques of supervision which will secure most rapid progress on the part of prospective college teachers have never been fully determined.

The methods which have been reported suggest possible activities which may be undertaken by practically any institution in attempting to improve its service to prospective college teachers. It is obvious that no one is in a position to dogmatize concerning the merits of any specific plan. There is urgent need, on the other hand, of critical studies of the needs of prospective college teachers and carefully planned experiments designed to determine the most effective methods of providing essential types of training.

One of the most encouraging facts revealed by the reports submitted is that special committees have been appointed in different institutions, delegated with the responsibility of studying problems relating to the preparation of college teachers. For example, Dean Bain of Columbia University reports that "an informally consti-

tuted committee is actively at work to see whether it is feasible to propose a general program looking toward the better training of college teachers and, if possible, to formulate such a program." Dean McPherson of Ohio State University reports that a committee known as a Committee on College Teaching was appointed some time ago. This committee has made a detailed study of the whole question of the preparation of college teaching and has submitted a report, a copy of which appears in the section for Ohio State University in the Appendix. Dean Crosby of the University of Pennsylvania reported that a committee of that institution had been intrusted with the task of studying the relationship of the graduate school to the prospective college teacher. These examples supply clear evidence of an awakened conscience among institutions relative to the needs of prospective college teachers.

CHAPTER IX

THE NATURE OF THE GENERAL PROFESSIONAL TRAINING NEEDED

CHARLES H. JUDD

A short time ago one of my colleagues informed me quite privately that there is general suspicion in the academic fraternity that departments of education are about to attempt to improve the teaching in institutions of higher education. He told me, for my own good and for the good of the department with which I am connected, that aggression on the part of the department of education will be resented. He pointed out that there is danger in disturbing the right of college teachers to do whatever they like to do. There are traditions of academic freedom and exclusive control in one's own classroom which have come down through the centuries, and he who trespasses on these rights invites ostracism or something worse.

Being duly warned, I hastened to say that the department of education is without special pride in its own performances of teaching and without desire to invade the preserves of any colleague. The department of education, all suspicion to the contrary notwithstanding, merely studies institutional life, earnestly seeking to understand what is going on in the academic world. The department of education is content to act as a recorder of occurrences, a chronicler of results.

As an example of the type of activity in which departments of education are interested, the following case may be described. The Department of Education at Iowa State College recently made a study of the results of the teaching of mathematics to engineering students. Let it be noted that the Department of Education did not attempt to teach mathematics or define what should be taught; it merely waited patiently until five years of teaching had been completed and then studied the results. When the achievements of students were compared, it was found that under some of the teachers of mathematics the average grades of students steadily deterio-

rated, and the students were not inspired to elect advanced work in mathematics. Under other teachers the results were exactly opposite: students improved in their work and voluntarily entered advanced courses.

Anyone who would hold the Department of Education at Iowa State College responsible for the results described ought also to hold the Department of Political Science of the University of Chicago responsible for the tax situation in Cook County. Perhaps it will be contended that the Department of Education ought to have left the study of the results in mathematics to the mathematicians. I confess I have a great deal of sympathy with such a contention. It would seem as though mathematicians should be the first to apply the technique of statistics to their own performances. Certainly we should all join in encouraging the mathematicians to be intelligent about the outcomes of their efforts. The Department of Education is merely encouraging the mathematicians to do what may naturally be expected of them. Surely no one can be critical of the student of educational institutions for doing what any mathematician might have done.

Let us take another example—this time from the University of Buffalo. This institution, like all others of its class and kind, is compelled to deal with a certain number of students who present adequate credentials for admission but seem unable after matriculation to keep up the rapid intellectual pace set by the learned specialists into whose hands they fall. Of course, the University of Buffalo could dismiss these laggards and could advertise to the world that its standards are so high that only the select few can attain unto them. The dean of that institution thought it worth his time, however, to experiment with some of the unpromising high-school graduates. He assembled them and told them how to take notes and how to unravel some of the intricate assignments that they encounter at the hands of instructors so engrossed in profound thinking that they do no thinking about assignments. The result of this special instruction to laggards was that a considerable number of the condemned ones proved to be fully qualified to complete with credit higher academic courses.

The scientific student of educational methods has no right to

show emotions when operating in the capacity of an impersonal observer of results of teaching, but this Buffalo experiment is calculated to carry one for a moment out of the strictly impersonal scientific attitude and plunge one into the attitude of an applauding citizen.

A third illustration can be drawn from a careful study made two years ago by W. J. Osburn, then a member of the State Department of Public Instruction of Wisconsin. Mr. Osburn compared carefully the content of certain courses given in colleges with the content of courses in the same subject given in high schools. The technique of comparison was somewhat intricate, but it was by no means superficial. Items were described in this study as "repeated" only when they were similar in form and exactly alike in significance. One of Mr. Osburn's findings will be enough for our present purposes. It appears that 22.8 per cent of the history taught in colleges repeats exactly that taught by the high schools. Of course, high schools and elementary schools are not altogether free from indictment because of like offense. One historian has discovered that pupils in the ordinary American public school encounter Christopher Columbus thirty-nine times before they are allowed to escape.

The scientific student of education is quite prepared to recognize the necessity of adopting the biblical maxim of applying line upon line and precept upon precept. He is compelled to wonder, however, whether the historians are really aware of the amount of human time and energy that they use in the study of repetitious matter. The student of education is, of course, an outsider so far as history is concerned. He merely stands on the side lines and records the score.

Lest the impression should fasten itself on your minds that this paper is merely a defense of scientific experimentation, I turn to a discussion of what I believe to be the true import of the examples which have been cited. It makes no difference who initiates studies of educational efficiency; the main fact is that civilization is driving all of us to abandon the kind of blind groping which has long characterized educational procedures. The public is thoroughly dissatisfied with the present situation in which those who should be fel-

low-workers heap all kinds of criticism on one another. There must be a way of freeing education from the gross inefficiency with which even its friends charge it. It is the business of the responsible officers of American colleges and universities to come to rational agreements on fundamental principles of educational organization. This desired end cannot be attained until the members of college faculties are trained to understand educational problems and are supplied with accurate facts regarding the results of educational efforts.

It is the contention of this paper that colleges and universities must give up the idea that whatever is now done is right or inevitable and must turn their energies to educational engineering.

Let us consider at some length one example of indefensible educational organization, which exhibits an almost unbelievable lack of intelligence in the American educational system. In the middle of the nineteenth century Horace Mann, Henry Barnard, Calvin Stowe, and others came to recognize the fact that the district school, the native common school of America, was without adequate organization. They reorganized the common school on the model of the eight-year *Volksschule* of Prussia. Apparently they did not give any attention to the fact that Prussia has in the *Gymnasium* a school altogether different from the *Volksschule*. The *Gymnasium* is a school for the boys who are going to enter the universities. The eight-year rudimentary school of America, like the German school for the common people, omits from its curriculum such subjects as Latin, modern languages, higher mathematics, and the specialized sciences. Since the American system provides no *Gymnasium* and all pupils go to the rudimentary elementary school for eight years, the astonishing result is that in America pupils in public schools are not admitted to the study of any foreign language or the other advanced subjects mentioned until they are fourteen years of age. The consequence of this late admission of American pupils to the study of other languages and of the advanced branches of mathematics and science is that American boys who enter the professions are, as President Eliot pointed out as long ago as 1888, two years behind European boys.

It is difficult to understand why the representatives of the neglected subjects have been willing to tolerate an inadequate curricu-

lum in the lower school. All that one can assume by way of explanation is that most teachers of the neglected subjects are ignorant of the history and organization of the American school system. That higher education has suffered in this country does not seem to have occurred to most specialists in spite of the clear statement made by President Eliot and reiterated by representatives of such professions as medicine and law, which suffer in consequence of the delay in the training of those who enter them.

I hope the statement just made is detailed enough to convey the idea that American education will never make adequate provision for its upper levels until it is properly organized in its elementary stages. It must be obvious to any careful student of institutional relations that schools need throughout their whole organization the guidance of the best-trained minds. Latin, French, mathematics, and science are certain to suffer in the college and university if the teachers of these subjects in the higher institutions refuse to be concerned with what goes on in the lower schools.

The contention of this paper is that college and university teachers are under obligation, as one of their routine duties, to give consideration to the organization of the lower schools. College teachers should study the whole school system. There ought to be in the curriculum of every graduate school a requirement that the students who are preparing to teach understand the educational system of which they intend to become a part.

A second example of shortsightedness in the organization of American education can be found in the way in which reading has been taught. Traditionally, reading has been treated as an elementary subject. As soon as pupils complete the elementary school, training in reading ceases. There is no course in reading in the high school, and certainly none in the college.

Recent investigations have shown that reading is not a single type of intellectual activity but a very complex group of activities. There are at least as many different types of reading as there are branches of mathematics. The child who reads successfully the exercises which are presented to him in the elementary curriculum is not thereby prepared for the many intricate forms of reading which he will encounter in the high school and college. The pupil in the

high school who is left to his own devices in adapting the reading abilities cultivated in the lower school to the new demands of the high school is often unable to cope with the new situations which confront him. There are a great many pupils in the high school who fail because they do not know how to read. There are a great many college students who fail in history and science and in other subjects because they are inadequately trained in reading. It is customary for high-school teachers and college teachers to criticize the elementary school when students prove to be incompetent readers. Such criticism of the lower school merely reveals the ignorance of the teachers in the higher institutions. The art of reading cannot be completely mastered in the lower school. It has higher levels exactly as does any mature art. There is a distinct place for instruction in reading in the upper schools. College teachers who do not know this fact are incompetent.

There is no probability that this frank statement of the case will lead to reform on the part of any large number of college teachers of the present generation. Such teachers are absorbed in their specialties and are too often uninterested in students who are failing because of lack of proper attention to their reading. The best we can hope for is a gradual spread of intelligence which will at some future date reach the majority of college teachers and compel them to help students cultivate correct methods of securing information from books.

Up to this point I have attempted to present concrete evidence of the lack of adequate preparation of college teachers for the performance of their duties. The question of how to remedy the situation is a difficult one to answer. It seems to me that there ought to be in every department one or more members of the staff sufficiently interested in teaching problems to study the results secured by present-day methods and to inaugurate experiments in reorganization. There is no possibility of general improvement of college teaching until all departments participate in studies of results and in experiments aiming at correction of defects.

To return for a moment to the matter to which reference was made at the beginning of this paper—it must be evident to all that

no single department, least of all the department of education, can change college teaching. The department of education is ready to be of assistance when called upon, but the other departments must be the centers of active experimentation and innovation. The department of education can discover that there are a number of varieties of reading and a great number of cases in which students are deficient, but the subject-matter departments will have to organize instruction which will remove the difficulties. The department of education can point out that the American elementary school has a borrowed and inadequate organization, but it cannot provide the trained teachers and the appropriate textbooks with which to reconstruct the school system. In short, educational reform, if it is to be effective, is a co-operative undertaking. So long as any division of the educational system remains aloof, progress toward better organization will be retarded.

The deplorable fact is that all of us who are occupied with the duty of teaching are likely to become so absorbed in our immediate tasks that we are not conscious of the necessity of pausing from time to time to consider new demands for greater efficiency. Most educational practices were fairly defensible when they were first inaugurated; but as civilization moves forward, the methods of earlier days prove inadequate.

It is an impressive fact, revealed by the history of education, that many of the greatest reforms in education were forced upon the educators by circumstances and conditions which were wholly outside the schools. For example, the industrial revolution which transformed American life beginning with the eighties has compelled high schools and colleges to change their offerings and their mode of organization to an extent which is almost beyond belief. A member of the staff of the United States Office of Education is responsible for the statement that in 1870 the total number of subjects offered in American high schools was nine and that the offerings of the present time include 250 different subjects. All of us realize that the demand for more training in order to prepare for the complex life of our times has sent to high schools and colleges an unprecedented number of students. The expansion from 200,000 students

in colleges and higher technical schools in 1900 to 900,000 such students today has changed the character of higher education whether we of the faculties are aware of the change or not.

Professional educators not only did not foresee the changes that followed the industrial revolution but even resisted these changes. The expansion of the curriculum has been a slow process with every step contested. One has only to recall the fact that the natural sciences were for years regarded as undesirable additions to the academic program to be convinced that colleges were reluctant to keep pace with demands imposed by the outside forces of society. Advocates of the natural sciences were obliged at first to accept a new degree for their students, one which was long regarded as inferior. Commercial courses are even today regarded with disdain by the older departments.

One could forgive educators for not foreseeing all the changes which have come if only they had been openminded enough to adjust themselves to the changes when they came. Anyone who studies the needs and demands of society must be convinced that the educational program of a generation ago cannot satisfy the requirements of our day. If colleges and universities are compelled to change their ways, let them at least show good grace in accepting what is dictated by the social environment.

I have no formula of reorganization to propose, but I am here to urge that leaders in the various academic departments study the new situation. If we do not provide for rational reconstruction of our educational machinery, it will break down. It is perfectly futile for us to spend our time in mutual recriminations. It is a sign of hopeless inefficiency to persist in conventional practices and to attempt to force the new wine of modern life into old academic bottles.

If I have at all convinced you that there is a task to be performed, let me venture some suggestions as to the way in which we may attempt to perform the task.

First, let every department aim to stimulate its students who are going to teach to survey the whole educational system. It is not enough that college teachers should know the college. They ought

to know something of the educational systems of other countries, and they certainly should have a clear understanding of the scheme of education through which their students have passed. It is not enough for each college teacher to recall, as fully as he can, the school system which gave him his early training. In the first place, he knew very little about the system when he was a pupil; and, in the second place, there have been rapid changes which make the recollections of a mature man an unsatisfactory basis for judgments regarding present conditions. College teachers can never be broad enough for their positions unless they reach an understanding of the educational system of which they are a part through systematic, well-directed study.

After gaining knowledge of the educational system as a whole, every teacher in every academic field should make a study of his students and of the methods by which his subject can be adapted to their needs and capacities. One often hears criticisms of college instructors to the effect that they do not come into close contact with their students. It is sometimes thought that the difficulty can be removed by various devices intended to produce intimate social contacts. The plea which I have to make is not the one which is ordinarily made when it is suggested that isolation be overcome by inducing the instructor to invite his students to dinner. There may be some virtue in social contacts, but the plea here presented is for a careful study somewhat after the fashion of the study made by a physician of his patient. Education has something to learn from medicine. The literature of medicine is made up of descriptions of typical cases. The physician is equipped with a general knowledge which makes it possible for him rapidly and effectively to understand particular cases as they present themselves in his practice. I look forward to the time when there will be available in the educational literature of each department clinical handbooks describing the typical difficulties that will be encountered by each instructor. I remind you of the one general contribution which was offered to such departmental handbooks when it was pointed out that many students are deficient in reading.

A study of students and methods of teaching will inevitably lead

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to experimentation in new methods. There has always been a great deal of experimenting in colleges and schools. The trouble with much of this experimenting is that it stops with mere innovating. Experimenting is of little value unless its results are carefully studied and the continuation of the new method is made contingent on demonstrated success. Genuine evaluation of results requires something very different from the cultivation of enthusiasm by the inventor of a new device. Usually the true value of an educational reform can be accurately determined only after it passes out of the hands of its originator and proves itself to be workable or otherwise under conditions different from those under which it was first tried. I know of no more valuable training which could be given to a novitiate in the teaching profession than to require him to prove to a group of his colleagues that his teaching is producing good results. Every department should think of itself as a laboratory where methods of teaching are being tried and tested.

Perhaps I ought to say, for the sake of making the record complete, that I believe in research in the field in which a college teacher teaches as an indispensable part of his training. No one can read critically what is being written in his field unless he has himself participated in research in that field. I recognize all the shortcomings of research as a means of developing human nature, but I believe in it as the only true way of training a teacher in methods of critical thinking.

The topic assigned me is general professional training, and I suppose I might properly regard my duty as done. It is not usually thought to be a part of one's professional training to acquire a good English style. Still less is it thought to be a part of one's professional training to acquire broad human interests. I shall venture, however, to add to what I have said a few comments regarding these very general requirements because I believe that much of the recent discussion is clouded by misunderstandings with regard to general and professional training.

When the Association of American Colleges launched its campaign for changes in the programs of graduate schools, it did not, I believe, see clearly the difference between its positive and its negative demands. The document issued by the Association seemed to

call for a reduction in technical training when, as I believe, the Association really wanted breadth in general training. It is a fallacy to assume that general training in the broad fields of human interest will result from a mere reduction in research and from the pursuit of more courses of study. Broadmindedness is a quality which must be achieved by the most strenuous intellectual endeavor. Broadmindedness results from earnest inquiry rather than from mental relaxation. People do not become broad-minded by listening to lectures or reading books. To be sure, good lectures and books are often strong stimulators of personal thinking. When an individual is aroused to thinking and does the thinking, he will begin to broaden his mental life. The trouble with research which does not lead to broadmindedness is that it is exhausting and narcotic in its effects. I believe that many a student has been told that a piece of work done in the library or laboratory will secure him an appointment on a college faculty, and that he has done the work as a mere task. The work was not presented to him as an effort to meet a crucial need of the intellectual life of the civilization of the times. If it had been so presented and apprehended, the research would have generated in the worker something higher than routine intellectual industry. It is for this reason that I urge that every department try to fit the work of its students into the educational program of the country. No one who sees his efforts as part of a general social movement can be narrow-minded. On the other hand, no one who fails to see the value of his efforts can be an enthusiastic contributor to either research or teaching.

A true view of the situation tends thus to correct the disposition to regard research as in itself narrowing and pursuit of courses as broadening. The desire to express one's self clearly is not a mental experience foreign to true research. Slovenly expression is often exhibited by a routine worker whose only interest in research is the vocational advantage which it brings. Good English and broad interests are not incompatible with scientific productivity. In fact, all these virtues belong together and are achieved by an active mind which is sensitive to its environment and eager to fulfil its functions as a leader in the intellectual world.

By way of summary, I may say that the thesis of this paper is that all prospective college teachers should be trained in the methods and results of inquiry in the subjects which they are to teach; in the methods of critical evaluation of the results of teaching; in the spirit of venturesome experimental innovation in order that there may be constant improvement in their teaching; and, finally, in an understanding of the educational system which supports and conditions their teaching. Anything short of this complete round of professional training leaves the individual relatively incapable of fulfilling the duties of a well-trained and competent teacher.

CHAPTER X

THE TRAINING OF PROSPECTIVE COLLEGE TEACHERS OF SCIENCE

HENRY G. GALE

We may divide our graduate students in any science department roughly into three classes: (1) those who are taking courses in the department because it is allied to the department of their chief interest; (2) those who expect to become research workers in government or industrial laboratories; and (3) those who expect to become college teachers of science. Today I am discussing chiefly those students who look toward college teaching as a profession; but since the three classes of students cannot be entirely segregated, some of the things I wish to discuss apply to all three groups, although obviously the needs of the three are not identical.

Of first importance for a properly trained science teacher is, of course, a thorough mastery of the subject matter in his field, far in advance of what he would normally be expected to present to, and discuss with, his students. His training in the fundamentals of his science should be so broad that he can continue to read of the new advances and keep pace with modern developments after he has completed his university course. He must be an "authority" to his students, able to guide the most promising of them in reading and thinking, and perhaps in experimenting, beyond the natural limits of the average.

The good college teacher ought to have training in research, chiefly, perhaps, because the research habit of mind is so sure a defense against stagnation. In the sciences one quickly learns that very many problems can be solved by hard, consistent, conscientious work, and that at least some headway may be made toward the solution of almost any problem. There are two great lessons to be learned at the outset by the research worker in the sciences, which very soon become an unconscious part of his logical thinking. The first is the danger of generalization from insufficient data, and the

second is the necessity of considering the relative importance of the various factors which enter into a more or less complicated situation. If it rained yesterday, and last week Tuesday, and a week ago last Tuesday, we must not conclude that it will rain next Tuesday. If we wish to reduce the household expenses, it helps but little to be exceedingly careful over small items if we are careless concerning the large ones. Or, in more technical and scientific terms, if a determination involves equally a mass, a length, and a time, it is foolish to expend great effort in finding the mass and length to one-hundredth of 1 per cent if the time can be determined correctly only to within—say—5 per cent.

It is not always easy to say when a proposition may be considered as proved. The mathematicians, with their very exact methods, often look askance at what might satisfy a physicist. One of my mathematical friends told me one day how a physicist proves that all odd numbers are prime, i.e., are divisible only by themselves and unity. The physicist says, according to my friend, take 1, divisible by itself and unity only; 3, divisible by itself and unity only; 5, the same. The proposition seems sound that all odd numbers are prime. But to make sure, we will take one more observation, 7, divisible by itself and 1. The proposition is proved. No, I said, the physicist usually makes five observations, and this was an especially conscientious physicist. He tried 9, Ah! divisible by 3. Well, let's proceed; 11, yes; 13, yes. The proposition is proved; the 9 was an error of observation, a little puzzling, but to be ignored, since all the other observations agree! Someone has said that the mathematician despises the physicist, the physicist despises the chemist, the chemist despises the biologist. This is merely a more or less humorous way of saying that the formal proof of a hypothesis is simpler and more definite in mathematics than in biology, and that logical and conclusive experiments are easier to devise and execute in the physical than in the biological sciences. But the spirit of science is the same in all. Search indefatigably for the truth, do not become wedded to any favorite hypothesis, but give all possibilities an equal chance. When you have thoroughly convinced yourself of the accuracy of your conclusion, continue the proofs until others, competent to judge, will also be convinced.

I believe that we ought to trust the education of our college students chiefly to men who have thoroughly developed the spirit of research. Why? Because the spirit of inquiry is the most valuable attribute of the human mind. Children have it, but it seems to be largely desiccated somewhere along the march of education, in the elementary school, in the high school, or in college. Instead of discouraging research by students in the graduate school, we ought to be bending every effort to keep the spirit of research, the spirit of inquiry, alive in the colleges and high schools and grammar schools. What is the object of education? To store the mind with old facts? Why not buy a good encyclopedia and save all the time and expense of a college course? If a college education does not teach our students to reason, it is falling lamentably short of its most inspiring possibility. Every new situation which confronts a business man is a research problem; the lawyer must constantly apply the methods and processes of research; and for the physician every diagnosis is a research problem, and every cure of a critical illness, a research triumph.

Why, then, are we faced with the apparent desire on the part of some college executives to isolate their students as far as possible from the contamination of contact with the research type of mind and research methods? Personally I think it would be much wiser to introduce the spirit of research into college and high-school teaching than to attempt to throttle it by discouraging adequate research training for college teachers.

I believe that a teacher who has been properly trained in research will always have a more sympathetic attitude, not only to the spirit of inquiry in his students, but to efforts on the part of his colleagues to improve the curriculum and the methods of instruction in his institution. The teacher without training in research, unless he has unusual natural qualities, it too prone to give the same courses year after year, perhaps using the same textbooks and cracking the same jokes, too often as shopworn as the subject matter of his lectures, and as innocent of originality. One who has had a proper research training will at least be sympathetic to new ideas and will examine a suggestion for a change in collegiate procedure with a frank desire

to find out whether it may or may not be fairly expected to attain the ends for which it is proposed.

In addition to a thorough training in subject matter, and a more than casual first-hand experience in research, our college teachers in science should also be trained in more than one department. It is more than unfortunate to grant the Ph.D. degree to a man who expects to become a college teacher of science if he knows one field only, however well he may know that field. It is as unfortunate for science to be represented in the community by a man who is ignorant in all fields of knowledge except his specialty as it would be to be represented by a man ignorant of all social usages. We cannot at present fail to recognize that there is a tremendous cultural value in science if, as I believe, culture means a sympathy for and knowledge of the best creative thought. Surely the first third of the present century will live in history for its advances in science, as some of the great centuries of the past have been glorified by art and music and literature.

Unfortunately we cannot expect our graduate students to do much work outside of one or two or perhaps three departments. It is therefore the more imperative that our college students should have a carefully organized general education during the first half of the college course, and a broad foundation for specialization during the second half. I am sometimes inclined to say that the French and German examinations required in most universities for the Ph.D. degree would be justified for their cultural value, if for no other reason. I have never been quite reconciled to the change in the requirements for the Ph.D. degree from the required major and minor departments to a single department, for the same reasons. It would be a simple matter to hamper the usefulness of our graduates as college teachers if their training were too highly specialized. Perhaps, too, the man headed for a research career would rise to greater heights in the end if he started from a broader foundation.

I have advocated for the college teacher of science a thorough mastery of his subject, training in research, and as broad a general education as possible. Something is still to be said about method, both the methods of training a college teacher and the methods he

may use to help in the education of the college students who will come under his direction.

The usual methods of graduate instruction, the fifty-minute formal lecture by the professor, which runs to an hour or more if he is too much interested, or starts ten or fifteen minutes late if he is not interested enough, is probably the poorest form of teaching from a pedagogical standpoint that has ever been devised, especially for the undergraduate. But something may be said in its defense in the graduate school. In many of our sciences the recent growth of knowledge has been enormous. It is often the case that no textbooks have been written to cover important fields, and the journals are filled with new matter. The terminology is often complicated and sometimes confused. Articles sometimes challenge or disprove other apparently equally meritorious articles of nearly contemporaneous dates. Very few students have the ability, and none the time, to sift properly the great mass of material in many of the numerous fields. And yet our students must acquire a thoroughly up-to-date knowledge before they leave us. Special subjects might be worked up by various members of the class, to be sure, and reports read, with questions and comments by other students and by the instructor. This method furnishes excellent training in the preparation of reports. But how much better, in general, the instructor could have presented the same material, and how much better for the class to listen to him rather than to other students. Sometimes it seems as if we could not possibly get enough of the new and valuable material before our classes even if we were to talk as rapidly as possible for as many minutes as possible on every day of the year.

But does the student *get* it from lectures? Frequent oral and written quizzes must furnish the answer. As a compromise between the 100 per cent lecture method, in which the instructor does most of the work, gets most of the benefit and has all of the fun, and the opposite method, in which the student does all the work and undoubtedly is benefited but cannot possibly cover all the ground, I have come to look with favor on a series of concentrated lectures which furnish the backbone of the course, supplemented by the greatest possible amount of collateral reading by members of the

class. If notes are made on the reading and handed in regularly, the instructor knows pretty well what each member of the class is doing; and each member of the class may diverge on the lines that have caught his interest. Points of the most importance are brought out in class, where questions are asked freely, of and by the instructor, and by term papers.

University professors of science have not in the past been very much interested in methods of instruction, but they should be the first to welcome experiments along the line of testing and developing new methods in both the colleges and the graduate schools. And university men need the advice and assistance of specialists in education if they are to experiment efficiently in this direction. We are told, and we believe, that great improvements have been accomplished in elementary, grammar, and high-school methods of instruction by experts in education. It is not going to be easy to get university men to admit that the professor of education can tell them anything about how to lecture to their graduate students. But the fact is that the unsystematized and often inefficient and unsuccessful teaching in colleges has been for a long time the subject of comment and even ridicule on the part of educational experts. And, although it is not to be desired that methods should be so standardized that every college lecture and recitation should be conducted like every other one, still there is no doubt at all that if most college professors had had a course in the organization of lecture material and the technique of the recitation, our college students would reap the benefit of better teaching than they have ever had so far. I hope that it will not be long before we shall find departments of science co-operating with representatives of departments of education in an attempt to improve methods of training college teachers. Ought we not give our students instruction on *how* to teach as well as *what* to teach? The answer is obvious. We ought to give them a thorough course in method—in *how* college students should be taught. And here, probably before we can expect it in the graduate schools, we should have the co-operation of professors of education, working with our college departments.

I feel fairly certain on one point in the teaching of college science. I shall be very much surprised if we do not discover that the labora-

tory method of instruction has been carried very much too far. Laboratory practice was so evidently a fine thing that, when it was once started, it was almost inevitable that the pendulum should swing too far. I believe that at the present time our science students are wasting about half of the time they spend in the laboratory, and that much of the laboratory work required not only does not instruct or educate the student but often either bores him inexpressibly or, by unreasonable demands on his time, leads, in some cases, at least, to the faking of results, generally recognized and participated in by a large proportion of the class. If this is so, the excessive laboratory demand has ceased to have educational value and ought to be discontinued, the sooner the better. It is not alone on this ground, however, that I feel that we have carried the laboratory method too far. Medical students frequently spend their entire working day in the laboratory. What time have they to read or think? Many laboratory problems in chemistry and physics might much better be performed, quickly and skilfully, by the instructor, and hours thus be saved for reading and problem work by the student.

Our laboratory courses were originally organized on the theory that the student was to rediscover the laws of nature. We expected him to get all the thrills of the original discoverer. There is no great thrill in discovering that the resistance of a coil of wire is 3.509 ohms, or that a piece of metal contains 52.39 per cent copper.

The idea that the student is getting the research thrill from most laboratory work is utter nonsense. He is not rediscovering fundamental laws, and he knows it.

I believe that fewer experiments, designed especially to enable the student to discover something of real intrinsic interest, would be of far greater value.

Of course there must be enough laboratory work to teach the experimental method, to familiarize the student with the standard forms of apparatus, and to give him some facility in experimental technique. I shall be surprised if the professors of education, after a study of the problems of the college teacher, do not make a recommendation that the laboratory work required be diminished in many, if not in most, cases. I refer, of course, to the more general introductory science courses, not to advanced or research courses.

Do we know as yet what psychological processes are most efficient for students of college age? What special methods and techniques should be used to get the best results? How many professors of science know anything about these matters? Very few, I suspect; but I cannot help believing that most of them will recognize the importance of these questions and will welcome expert co-operation in trying to answer them.

We must experiment, and the graduate students who plan to become college teachers may well participate in these experiments. There are real problems here waiting solution, of enormous scientific interest, and of almost staggering economic importance. Are our present methods of instruction only 50 per cent efficient? Only 25 per cent efficient? Perhaps wrong? Would the college student learn more if he were taught less? Probably he would.

I know that students learn at once how to use a micrometer caliper if given it to find the diameter of a wire which they need to know accurately, while they have a terrible time trying to use it and understand it if they are given it merely as a micrometer caliper. Is it, then, possible that they would learn French and German more readily if things they really wanted to know were available only in those languages? Or, should they begin French and German earlier; and if so, how many years earlier?

Many a doctor's thesis might well be written on such subjects as these, and many studies should be made. However, until there are more men in the sciences who are interested and informed as to the current theories of method than at present, departments of education or professors in those departments will have to be responsible for these theses and these studies.

If the universities are to train teachers for the colleges, they ought to try to produce the best possible teachers. To this end, there should be a selection of applicants in the graduate schools. At present, however, instead of selecting students, our graduate schools seem to be competing for greater numbers of students almost as strenuously as the colleges are said to be competing for promising athletes. And graduate schools are not handicapped by a rule against financial inducements.

The members of the Association of American Universities, as

many of you know, have an agreement under which fellowships are offered to applicants by all universities on the same date, April 1; and no indication is given to any student, in advance of that time, as to whether or not he is to be offered a fellowship. But it happens that the number and size of scholarships have grown conspicuously as the competition for graduate students has grown, and there is no rule as to when these may be offered. One of our universities of highest standing announced a few years ago that it would offer no more fellowships, except a few endowed ones. The implication was that the unquestioned high standing of the university in question would attract all of the graduate students desired without the added inducement of fellowships. But that university at once increased the size and number of its scholarships, and notified the applicants that they must accept before the first of April or the offers would be withdrawn. Under the name "scholarships," they were quite as lucrative as the fellowships had been. This sort of thing is frankly an attempt to hire graduate students. Unfortunately they show a decided tendency to select the institution where they are to work solely on the basis of the size of the fellowship they can get, and apparently often on no other basis.

I have sometimes thought that much could be said for the policy of requiring a year's residence before awarding a fellowship to any student. The objections to this policy are many and obvious, and probably would outweigh the advantages. After all, it is the exceptional student who should be encouraged; and we can afford to suffer an occasional disappointment in the men selected for fellowships if, once in a while, we find a really outstanding man. Perhaps it would be better for us to abolish our general university fellowships and use the money as loan funds. Experience at the University of Chicago has shown that funds loaned to students at 4 per cent tend to increase, in spite of occasional failures to pay.

The demand for college teachers of science is very pressing. A very fair percentage of our graduate students in science who receive the Doctor's degree go into industrial or government positions, and there seems to be a call for more teachers than we can supply. Nevertheless, I think we ought to select with considerable care those prospective teachers whom we are willing to accept as candidates

for the Ph.D. degree. The knowledge of subject matter required ought to be as complete as that of the student who plans to be a research worker, and they should present as thorough and exhaustive a thesis. We should expect them to acquire some professional knowledge of the technique of teaching their principal subject, and some knowledge of various types of college and university organizations. They should be familiar with the general problems of method and might or might not elect to write the Ph.D. thesis on some educational phase of the work in their chosen department.

Special effort should be made to select those who have the special gift of personality which is necessary for a successful teacher, and without which no amount of knowledge either of method or of subject matter can make a good teacher any more than mere knowledge of technique can make any other sort of artist. Good teaching is the finest of the fine arts and requires for its perfect flowering, not only training, but that love for the work which, being a spiritual quality, is difficult to impart but is always to be found in the great teacher.

CHAPTER XI

THE SPECIFIC PROFESSIONAL TRAINING AT THE UNIVERSITY OF CHICAGO OF PROSPECTIVE TEACHERS OF GEOGRAPHY IN COLLEGES, UNIVERSITIES, AND TEACHER-TRAINING INSTITUTIONS

HARLAN H. BARROWS

Since approximately nine-tenths of the graduate students in the Department of Geography of the University of Chicago who obtain higher degrees become teachers in universities, colleges, or teacher-training institutions, the Department naturally is giving serious attention to the training of prospective teachers and is eager to improve that feature of its work.

Some five years ago the members of the departmental staff formulated the specific qualifications which, judging by their experience and that of various other geographers and by the work in geography that is offered in higher institutions, seem to be needed by students who undertake the teaching of geography at higher levels. This action resulted from the belief that courses in the Department could not otherwise be planned and conducted to best advantage from the point of view of their respective contributions to the effective training of prospective teachers. The value of the procedure has been demonstrated abundantly. The qualifications thus formulated involve various distinctive understandings, abilities, and attitudes. Among them are the ability to organize independently a systematic, mature geographic investigation of any area, the ability to present geographic material in a lucid manner (whether orally, graphically, cartographically, or in written form), the ability to select and treat facts for teaching purposes in accordance with the theme which distinguishes modern geography from other sciences, and the ability to adjust both subject matter and technique to the needs of a given group of students. I mention these particular qualifications because

of the increasing emphasis which we have put upon them in recent years in preparing students for the teaching profession.

An earnest effort is made not to admit to the Department as a prospective teacher any student who seems unlikely to develop the qualities to which reference has been made or one whose personality seems clearly unsuited to teaching. Each year a few applicants are rejected because their earlier records are poor, the testimony of reliable persons acquainted with them is unfavorable, or the impressions obtained from preliminary correspondence and initial conferences do not warrant their admission. However, the problem of selecting graduate students has not been solved satisfactorily by the Department, and year by year it becomes a more serious matter. If a student is admitted, a tentative program of study is arranged in terms of his earlier training and experience and the type of teaching or other work for which he wishes to prepare himself. If, as happens in some cases, he changes his plans, the program is modified accordingly. It may also be modified from time to time with a view to providing experiences the need for which has been disclosed by his work here. The adjustment of individual programs and the elimination of students who cannot carry their work creditably will be aided in the future by written reports at the close of each quarter from each member of the staff on all graduate students in his courses. These diagnostic reports, emphasizing elements of strength and of weakness and suggesting helpful measures, will constitute definite case records that should prove very valuable.

As already indicated, the detailed program to be followed by any given student is determined in part, of course, by the nature of his earlier training. Many students turn to geography for a career, as many turn to other fields, after the completion of their undergraduate study. Thus one of the present fellows of the Department had no undergraduate work in geography, while another obtained a Master's degree in a different subject before he became interested in geography. Such men have had to spend a good deal of time in fulfilling basic requirements before undertaking advanced work, but doubtless it is quite futile to wish that all men might determine while in college the nature of their life-work and shape their later undergraduate study accordingly.

Another department has suggested recently that a co-operative plan might be formulated by departments in the University and the corresponding departments in colleges from which our graduate students ordinarily come, under which a person intending to study for a higher degree here would begin work looking definitely toward that degree at an earlier stage and would carry his undergraduate preparation farther than he now does. The suggestion has interesting possibilities. Whatever their geographic background may be, most graduate students in the Department of Geography begin their studies without a working knowledge of French and German, without a firm grounding in such related subjects as economics, botany, and geology, and especially without reasonable attainments in the general field of English composition. Of all the weaknesses that hamper the progress of our graduate students and that add improperly to the teaching burdens of the staff, the most serious is the inability to organize material logically and to make statements that are accurate, clear, and effective. During the last decade no student, I believe, has obtained a Master's degree in geography in one year, even in cases where no excess course requirements were imposed because of deficiencies in preparation for graduate work in the subject. It is always the thesis that delays matters, and it is almost always weakness in composition that prolongs the thesis work. The problem involved apparently concerns all departments, and it has been suggested that the University might well (1) require every graduate student to take a test in composition in the first quarter of residence, and (2) require formal work in composition of all students who fail to pass the test. Such a procedure certainly would tend to improve the work of graduate students and to facilitate their preparation for teaching. Of course each department would still have to provide the training in technical exposition needed by its students.

As you may have concluded before this, I do not know precisely what was meant by my assignment for this afternoon—"The Specific Professional Training of Prospective College Teachers of Geography." I assume, however, that the specific professional training of prospective teachers of a given subject should be interpreted to mean *any and all training that contributes definitely to*

their preparation for such work, and not simply formal training in methods of teaching as applied to that subject.

In any event, I am firmly convinced that to teach any subject successfully in a university or college a person needs, above everything except a suitable personality, mastery of subject matter, training and experience in research, and enthusiasm for both teaching and research. However the individual programs of our graduate students who are preparing to teach geography may differ in detail from one another because of dissimilar undergraduate training or for other reasons, they accordingly are devoted very largely to academic training as against professional training in the narrow sense. Nothing that I say, however, is intended for the briefest moment to suggest that our students do not need formal training in sound methods of teaching geography. Quite the opposite is true; and I wish explicitly to state that until the School of Education came to the rescue five or six years ago by establishing in its Special Methods Department of Geography a course on "The Teaching of Geography in Normal Schools," we were sending men and women to normal schools and teachers colleges who, despite our best efforts, were utterly unprepared to organize and present geographic material with special reference to the distinctive needs of their students in such schools. When this course in the School of Education was first offered, some of the members of our staff doubted the wisdom of making it a requirement for all students preparing to teach geography in teachers colleges or normal schools, since some of those students would be graduates of teacher-training institutions and some of them would have taught in such schools. Experience presently showed that such a requirement would have been superfluous. No student of the Department who holds a position in a teacher-training institution or who hopes to do so would now miss the course, whatever his earlier training or experience; and many students, some of them veteran teachers, have volunteered the information that this was the most valuable course which they had taken in the University. I may add that experience also has shown that most of our normal-school teachers need this course quite as much as most of our novices, since the former have so much to unlearn.

It is earnestly hoped that a similar course can be provided pres-

ently on the teaching of geography in universities and in colleges other than teachers colleges. There can be no question of the great value of special courses on the organization and presentation of geographic material for teaching purposes when conducted by a person thoroughly equipped both in education and in geography. It is, I think, the futile effort of some educators to apply the general principles of education to special fields with whose philosophy, subject matter, and research methods they have little acquaintance that has brought "method courses" into disfavor in many academic circles.

Careful attention is now being given to the question of what additional courses, if any, should be taken in the School of Education by our graduate students. At the close of the Spring Quarter, 1930, each of the sixteen members of the course on the teaching of geography in normal schools, fourteen of whom are candidates for the Master's degree or the Doctor's degree in geography, was asked to answer in writing the question, "Would it be profitable to you at this stage in your training to take additional courses in Education?" Fourteen of the group answered in the affirmative, and perhaps it is interesting to note that several of them expressed a need for training in educational statistics.

Some effort has been made in the Department to provide incidental training for teaching. In appropriate cases, for example, students have been advised to visit particular courses to observe the methods of instruction employed; and some of the instructors involved have at times called special meetings of such observers to discuss teaching procedures. Partly as a phase of teacher-training, the reports made in certain courses, notably the pro-seminar, are criticized with reference to organization, style, and delivery, as well as with reference to content. There is also, of course, abundant opportunity for any student to discuss teaching problems with staff members, though this is left largely to the initiative of the student. There remain, I am sure, possibilities in the way of capitalizing incidentally the day-to-day classroom experiences of students in fitting them for college teaching which the Department has not realized. The whole matter is not so simple, I believe, as some of my colleagues in the Department of Geography and in other departments contend. One of them writes:

It is supposed that any man with the intelligence demanded for graduate work in the department, who is planning to go into teaching, will be able to "direct" himself to observe the techniques of members of the staff, etc. The department has great faith in self-development and desires most emphatically to see not only our graduate students but also our college students treated as rational and self-reliant individuals, and not led by the hand as children would be.

So far as I know, dependable criteria have not been established for the critical evaluation of various methods or techniques in the teaching of most subjects at the college level. Certainly in teaching geography at that level, procedures are based for the most part not upon objective evidence obtained through scientific experimentation but upon mere opinion.

What the Department of Geography chiefly needs at this juncture in order to improve the training of its students is the addition to the staff of a person thoroughly equipped in geography and skilled in educational research who can (1) survey its courses (undergraduate as well as graduate) and (2) guide experimental activities designed to improve them. Data should be compiled in usable form concerning (1) the major and minor understandings to be gained from each course, (2) the specific abilities to be developed in each of them, and (3) the activities which students are led to perform in each course with a view to accomplishing the ends sought.

In addition to the usual subjective tests, objective tests should be given at the end of each course to help determine whether or not students actually have the understandings and abilities which the course is intended to provide, and whether or not they can use them in new situations where the understandings and abilities might well function. The errors made by students in these tests and in regular assignments should be recorded systematically, classified as to type, and ranked according to frequency of occurrence. The sources of the errors thus revealed should next be determined, so far as possible, by means of intelligence tests, case records, conferences with students concerning the difficulties they experienced in the work, and by other appropriate measures. Very possibly it would be found, for example, that one of the major sources of error is the assumption by instructors that students have certain basic concepts as a result of their earlier training which in reality they do not possess.

Such a disclosure would indicate a need for exploratory testing to determine the extent to which students entering the courses involved really have the background which was assumed in organizing those courses. This might suggest, in turn, new prerequisites for the courses in question, or a modification of the courses as to content or method. Such an analysis of the shortcomings of students in their attempts to reach the goals of existing courses would furnish one important basis for an appraisal of the understandings and abilities listed at the outset. Some of the reasons that were established for difficulties commonly experienced might point directly to defects in the courses which could be remedied, and the discovery of the latter would lead to experimentation with procedures designed to be remedial. The value of remedial measures that might be proposed would need to be established by experimentation with students, by achievement tests following the experiments, and by a comparison of the results obtained with those which had been recorded as the outcomes of earlier procedures. Thus, improvement would not be a matter of chance based on mere trial and error but would be assured by systematic and extended investigation.

The improvement of existing courses would not be the only result of investigations along the lines just indicated. The proposed course on the teaching of geography in universities and colleges would be based in large part on the findings obtained. This course, by the way, would be given by the educational geographer responsible for the investigations. Graduate students would participate in some of the investigations and would receive more and better guidance in the observation and study of teaching procedures. They would become acquainted in larger measure with the techniques of educational experimentation in geographic instruction in universities and colleges, and with the specific standards and objectives which should be attained, as nearly as possible, in such instruction. Any considerable improvement in our preparation of teachers of geography can come, I believe, only through scientific experimentation and the definite measurement of results.

CHAPTER XII

NOTES ON THE TRAINING OF COLLEGE TEACHERS OF MODERN LANGUAGES

ALGERNON COLEMAN

The title of this paper is intentionally modest. Among the flood of articles and books in which the graduate school is shown up as the great illusion in its pretended rôle of training college teachers, I have found no specifications that enable me to conclude just what should be done in order that the graduate schools may no longer continue to delude the students who come to them for training and the colleges who look to them for teachers. The public has been convinced that the Ph.D. is a clammy and bloodless individual, interested only in topics like King Henry the Eighth's suspenders. Mr. Abraham Flexner, who it appears will soon have a graduate school of his own to organize, speaks of "the peculiarly fleshless character of modern research." Remarks of a similar kind are commonplaces in discussions of educational problems in the college. Those who utter criticisms of this character could, no doubt, provide complete plans and specifications to guide our way; but they have, so far as I know, carefully refrained from mapping out a curriculum for the better training of prospective college teachers of modern languages. We who are devoting our best efforts to the task have known for a long time that our purposes were being only partially achieved, but we have not found out just how the clearly perceived defects are to be remedied by the graduate school. It appears to us that the critics have not taken into account the complexity of the problem; that they lose sight of two important facts: First, that the graduate school takes up the problem of training only after secondary school and college agencies have made their contribution, and second, that it cannot revamp a student's whole education in the one year usually devoted to obtaining a Master's degree, nor even in the three years it takes to convert a worthy, hopeful, and eager human being into that most completely desiccated of all products, a Ph.D.

Therefore, since light has not been given me from without, and since we teachers in graduate schools of modern languages have all along been doing our best according to the very dim lamp—or should it be called the *ignis fatuus?*—of our unaided intelligence and experience, I can lay before you today only some "thoughts on the present discontent," some notes on a problem which is worthy of a more substantial analysis than I am able to offer.

In considering the general question, we must bear in mind, first, the training that the candidate has received in a secondary school and in college before he enters the graduate school, and, secondly, what kind of teaching he is to do after receiving his degree. We must also take into account the very definite and increasing demand on the part of the colleges that a considerable number of their faculty members shall hold the doctorate, which results not infrequently in forcing through that process individuals whose best contribution to society is not to be made in a seminar room.

In even a rapid survey of the situation we must note also that the economic status of the college professor is still too low to attract many individuals of first-rate gifts, and that the familiar exhortation that you must first catch the rabbit is quite as applicable to formulas for producing superior college teachers as to recipes for preparing a succulent rabbit stew. This is such a fundamental consideration that failure to take it into account in considering why there is so much poor teaching material in the colleges would be a basic error. The whole drift of our male undergraduates is away from the humanities. It is a noteworthy event in the day of the departmental counselor in Romance at Chicago when a capable male student announces that he wishes to enrol for a major sequence in French or in Spanish. Our advanced undergraduate courses in those subjects are overwhelmingly feminine in population. While this fact is to be explained in part by a general drift of men toward the natural sciences and social studies, it is also closely associated with the prevailing impression that modern languages have no vocational bearing except for prospective teachers, and with the well-founded belief that few vigorous men can afford to be college teachers, except perhaps in the twelve-month period just after a stock-market crash, when even a college salary looks like real money. In the pres-

ent connection, however, we can only take note of the fact that the small financial reward offered the college teacher automatically eliminates that calling from the list of careers that challenge the interest of our ablest young men, and then pass on to the aspects of the subject that lie in the province of one interested in the training of those who have actually decided on the college teaching of modern languages as a profession.

It may be assumed that all the members of this gathering know in a general way about the extensive investigation into the teaching and learning of modern languages which was initiated in 1924 under a grant from the Carnegie Corporation, the results of which are incorporated in a series of publications, seventeen in number, that bear the imprint of the Macmillan Company. In the very nature of the case this investigation dealt chiefly with modern-language teaching at the secondary-school level, including the junior college. The Committee on Investigation was fully aware that, in thus limiting its activities, it was leaving untouched the important field in which this gathering is chiefly interested. But it could see no possibility of making a thorough study of the situation in the graduate schools of the country, and therefore it confined the study of teacher-training to the college departments whence come the great mass of modern-language teachers in secondary schools. At the same time, however, the report of Professor Purin on the *Training of Teachers of Modern Foreign Languages,* which is Vol. XIII in the series, contains a mass of valuable material. It shows, among other things, what was the training and experience of 10,096 teachers of modern languages in public secondary schools in 1925. Since the future college teacher usually has his initial training in a public secondary school and often himself teaches there for a time before entering upon graduate work, I may call your attention rapidly to a few salient facts.

The average period of study for the teachers reporting was, for French (4,326 teachers), five years; for German (334 teachers), six years; for Spanish (2,478 teachers), four years. The average period of teaching experience for these languages was, in the same order, six, eleven, six years. More than one-third of the French teachers, more than one-fourth of the German teachers, and almost

exactly one-third of the Spanish teachers had had less than three years' teaching experience. Of the total number of teachers, 76 per cent held a Bachelor's degree alone and about 10 per cent had a Master's degree in addition. Of the more than 10,000 teachers reporting, about 69 per cent had neither traveled nor studied in foreign countries. It is true that these figures vary considerably in different sections of the United States. In the North Central territory, for example, only 28 per cent of the teachers reporting had been abroad, while in California the proportion ran to 46 per cent. When we consider that about one-third of our modern-language teaching staff apparently has to be renewed every three years, we are struck by the size of the turnover. Furthermore, if we note that five years is the average training period in the language for French teachers, and four years for Spanish, with only a very small chance of this being supplemented by foreign residence, it is evident that the most serious handicaps to effective modern-language teaching in the United States arise from the brief period during which secondary-school teachers study their subject, the briefer period in which they remain in the profession, and the very small number that make first-hand contacts with the languages in the countries where they are spoken. It is the usual vicious circle. Of the 700,000 and more modern-language pupils in the United States, hundreds of thousands are taught by teachers with an insufficient linguistic equipment; and out of these hundreds of thousands come many of those who later become secondary-school and college teachers. They, in turn, prepare others, who in their turn go into the teaching profession.

The teachers themselves realize this. When the Committee on Investigation of the Modern Language Study asked what was the greatest difficulty in the way of developing an oral command of the foreign languages in our classrooms, the teachers addressed answered that it was the inability on the part of the members of the profession themselves to use the languages orally. Here, then, we have one serious barrier to the proper training of college teachers of modern languages. Their initiation in the subject has, not always, but too often, taken place under circumstances that impose the necessity of very careful remedial treatment later on. Those of us who see new

recruits for advanced degrees come to the university every year, and observe how deficient many of them are in ability to speak and to write the foreign language they intend to profess, are keenly aware of our inability to develop in them, in the one short year allowed for the A. M., new oral habits and the ability to express themselves in the foreign language. One-half their time would be too little for this purpose; but they must, in addition, be grounded in the critical study of literature and in methods of investigation, in addition to informational courses of which many of them stand in sad need because of the very limited programs followed in many smaller colleges. Their one or two years in secondary school plus their college training would leave less groundwork to be done in the graduate school if our secondary teachers were in general more effectively equipped linguistically and if pupils who show interest and aptitude were encouraged to pursue the subject longer than the regulation two years. Several ways in which this aspect of the situation may be improved are pointed out in the report already referred to. I shall mention only the recommendations that favor for prospective teachers a minimum of thirty semesters of college work in their major subject in addition to two years high school, an adequate oral command of the language, the certification of teachers according to the subject matters in which they are competent, and the supervision of modern-language teaching in larger schools and school systems by experts in that field.

Up to this point I have discussed the better preparation of secondary-school teachers, both because it is they who initiate the prospective college teacher in modern languages and because many of them subsequently turn to the graduate school and become college teachers themselves. It is now appropriate to speak more specifically of undergraduate training in the field, and here certain quantitative data are provided by the report of the Modern Language Study Committee. The median number of semester-hours required of a candidate majoring in modern languages in the colleges reporting in 1925 was: For candidates with one year in the secondary school, 27 semester-hours; for candidates with two years in the secondary school, 24.6 semester-hours; with three years, 23.4 semester-hours; and with four years, 22.3 semester-hours. This would mean roughly a three-hour course per year for four years for candidates who pre-

sent two units or more in the language for entrance. It is clear that those who enter college with three or four units do proportionately more work in the chief modern language in high school plus college than those who enter with one unit or with two. But in view of the well-established fact that only about 17 per cent of the secondary-school pupils who begin a modern language continue for as long as three years in high school and that fewer than 3 per cent continue for four years, it is very probable that most candidates have, at graduation from college, had the shorter period of study in their major language, which is less by about two and a half quarter-courses than the regular requirement of quarter-courses in Romance in the University of Chicago, counting from the last of the five elementary courses in the junior college division.

The testimony on this point of the graduate students in French and in Spanish in residence at this institution last spring tends strongly to support the assumption that in from 25 to 50 per cent of the cases prospective candidates for a graduate degree find upon entrance into the graduate school that their preparation in language or in literature, or in both, is inadequate. Thus we see that our colleges, from which secondary-school teachers are drawn, frequently do not give their graduates the proper equipment, so that when they enter the graduate school they find it necessary to make up their deficiencies—assuming that they are registered in an institution that makes provision for detecting these deficiencies and for correcting them.

We have before us now the source of one considerable and far-reaching weakness in the preparation of modern-language college teachers—a weakness for which secondary-school and college departments of modern languages have the chief responsibility. Prospective teachers must be better advised in their college courses; they must be given better instruction in the language itself; and ampler library facilities for acquiring a knowledge of the foreign literature through wider reading must be provided and utilized during this undergraduate period; for only then can the graduate school complete their training in a satisfactory way.

The graduate schools have indeed a serious responsibility, but all the deficiencies cannot be laid at their doors. If secondary schools were careful, in the selection of their teachers, to take only those

who really know their subjects, and the colleges to appoint on their staffs only those who have the necessary subject-matter equipment, to pay them better salaries, to give them a teaching-load which would enable them to carry on independent study, and to provide them with the library facilities necessary for this purpose, the first important step in the improvement that we all desire would have been taken.

The charge usually made against the graduate school as a teacher-training agency is formulated perhaps as succinctly as anywhere else in the volume of L. B. Richardson, *A Study of the Liberal College* (pp. 268 ff.). The product of the graduate school has a mastery of a specialty but his range is very limited outside his own field; he reveres research but looks down on teaching; he possesses a slight degree of real culture; when confronted by college classes, he would transfer to the new situation the same techniques that were followed in the graduate school. While instruction in pedagogy as such need not have a large place in the curriculum, the prospective college teacher should have wider contacts with larger fields and should know how important it is in teaching to insist on the interrelationships between the various literatures, between literature and history and art and philosophy, and even between literature and sociology and economics.

While this charge against the graduate school is in some respects well founded, it is rather sweeping. Those who make it appear to forget that four years of the liberal college precede the graduate school. When the prospective college teacher enters upon his specialty, he presumably has had fairly broad contacts with the various subject matters of a liberal education. If this is the case and if the candidate is a person of good intelligence, he should not be dependent upon his graduate instructors to do all his thinking for him. The graduate school cannot re-educate him *ab initio*. It must train him in his special field, and cannot beget in him that sympathy with the young, that acquaintance with all other provinces of knowledge, that eagerness for wide reading in various literatures, in history and in philosophy, toward which, in the judgment of these critics, he has made progress neither as a result of his secondary-school and college training nor as a result of his own voluntary reading and personal experience.

It may be true that in some fields graduate students look forward to a career of research, but in at least one important department of Romance languages, the students, on their own testimony, realize that teaching will be their chief task. While a respectable number of this group hope and expect to continue their investigations, the majority place preparation for teaching as their first concern. I suspect that the charge of indifference to teaching as the result of graduate training is based on little more concrete evidence than the fact that there are many poor teachers in our colleges, as there are many poor lawyers at the bar, many mediocre clergymen in the pulpit, many unsatisfactory physicians at bedsides, and many dull lecturers in graduate schools.

If, however, the graduate school is not responsible for all the defects of college teaching, as many persons appear to think, it is not, therefore, free from weaknesses, nor can it place all the responsibility on the student's home environment, on his defects of personality, on his secondary-school training, and on the college language department in which he prepared for graduate work. Graduate departments are inclined to pay too little attention to what their students will actually do when they become college teachers.

When we turn to the college teaching situation in modern languages and inquire what our Masters and Doctors will be called on to do after receiving their degrees, we may rely in part on well-established fact and in part on inference drawn from the examination of a limited number of catalogues.

One important set of facts established by the report of the Modern Foreign Language Study[1] on enrolment in the colleges in 1925 reveals the proportion of students in the introductory and the more advanced courses. Nearly 40 per cent of all undergraduates enrolled in modern languages were in first year (p. 415). The proportion of enrolments in the various languages was as follows:

	French	German	Spanish
First year, percentage	28	56	47
Second year, percentage	30	23	32

[1] C. A. Wheeler and others, *Enrollment in the Foreign Languages in Secondary Schools and Colleges of the U.S.*, "Publications of the American and Canadian Committees on Modern Languages," Vol. IV.

Above the second year the proportions were as follows: French, 42 per cent; German, 21 per cent; Spanish, 21 per cent.

It may therefore be considered as established that the Master or the Doctor entering upon his career as a college teacher will have a very large proportion of his pupil hours in first- and second-year work, particularly in German and in Spanish. Especially is this true in the region west of the Alleghenies, where the colleges in general demand less foreign language for entrance and for graduation than in the eastern states.

From a somewhat cursory inspection of college catalogues, I conclude that in addition to first- and second-year classes for those entering with no modern language or with two years, most regular colleges provide a two- to four-hour course in composition and grammar and a six-hour introduction to the foreign literature. Certain more specialized period or *genre* courses are also announced on a two- to four-hour basis. In a number of cases it is specified that these are offered in alternate years, or every third year, and one could have no way of knowing, except by resorting to the detested questionnaire, how regularly courses of this kind are actually given or with what enrolment. Nor can one readily determine whether library facilities are generous enough to enable students to read widely if they have the appetite. One may venture to guess, however, that the Freshman entering college with two units of a modern language will usually take the second-year college course, and may follow this, if he majors in the subject, by four hours of composition and grammar, a six-hour survey course, and six hours of work in types like the drama, the novel, poetry, with two hours or more of conversation and usage. Then there is usually a teachers' course, in which phonetics, grammar, and composition play a prominent part.

The foregoing statements, while offered with due reservations, suggest both the type of training that the prospective graduate student receives in college and what his teaching duties will be when he returns to the college campus as an instructor. If substantially correct, they suggest also that he should acquire a sound knowledge of the foreign language in its spoken and written forms; that he should not only pronounce it in a way that closely approximates the sounds and intonation of the native but should know just how this effect is

attained; that he should know at first hand, both appreciatively and critically, the literary masterpieces in his field and the social and historical backgrounds out of which they arose; and that he should have pursued with interest and sound method an investigation that will enable him to give his college students at least a suggestion of the interest and satisfaction that result when one attacks a problem seriously and masters it in detail.

In addition to this subject-matter equipment, which I have mentioned only in the barest outline, he should have studied with care the modern-language situation in the secondary school and in the college: the aims and the subject matter of courses, the materials and class methods that fit the general situation. And both by observation and participation he should have developed in a preliminary way a point of view and conceptions of technique that will enable him to face his first classes with a reasonable understanding of the problems that confront him and them. The majority of our graduate students have, to be sure, had teaching experience before receiving their higher degrees; but so potent is the corrupting influence of graduate method in the opinion of many estimable persons that graduate departments should take especial pains to provide antidotes for the poisons that they all unwittingly distil. While the investigations of the Modern Language Study did not specifically contribute to some of the most important aspects of college teaching, yet they did point the way; and I feel that more progress is possible now than before the committee published its reports.

The only holders of the doctorate from the department to which I belong who may be counted as failures, as failure is gauged by a rather nomadic existence in the college world, owe their misfortunes to defects in temperament, to inability to work with others. This is a disease that the graduate school cannot cure. They attained distinction in scholarship but were failures socially. Aside from these few cases, the chief defects that I have noted—and this applies especially to candidates for the A.M.—are an insufficiently broad contact with foreign literature and civilization through their own reading and meditation and an inadequate knowledge of the foreign language as spoken and written today. Except in the case of unusually well-prepared undergraduates, these two ambitious aims cannot be

achieved in one year. It seems to me, therefore, that the residence period for the Master's degree should be extended to two years except in cases where so long a period is plainly not necessary. During this lengthened period the student should do more work of a foundation character in literature; should have two or three courses in the current language over against the one or two that the present program allows; should devote from one-fifth to one-fourth of his time to work in related departments such as history, art, and comparative literature; and should, in addition to the required graduate course in special methods, be, for a quarter or a semester at least, a member of a round-table group for the discussion of teaching-problems. In addition he should be required to observe the teaching procedures employed in the courses that correspond to those which he will teach. If possible—and why is it not possible?—he should have regular service as a practice teacher under circumstances similar to those that prevail now in experimental schools. Furthermore, the course in special methods and the round-table discussions should not be limited to problems of elementary classes; they should at least attempt an attack on the problem of the college curriculum in modern languages and on the procedures to be followed in classes in literature and in more advanced language.

Using such a program as a basis, the doctoral candidate should follow the same plan during the first three or four semesters of graduate study, reserving his third year almost exclusively for independent investigation. Furthermore, it should be possible for Master candidates and even for prospective Doctors to do a portion of their research work in the field of teaching problems. The Romance Department at Chicago has already accepted several Master's theses and two doctoral theses on subjects of this nature. There are, of course, major difficulties in the way; but with the aid of departments of education and of psychology real contributions may be made, if there is good will on both sides.

A Master of Arts trained in the way outlined above should be well qualified to conduct the modern-language courses in all but a few institutions. I am aware of the fact that various associations insist on the inclusion of a certain number of Doctors in each faculty, and often one gets the impression that the letters after the name are of

more importance than anything else when prexy is in search of a new man. To the impartial observer this ruling is somewhat paradoxical when we consider that most of the bricks hurled at the Ph.D. come from just this quarter, but these missiles may be just a mark of esteem, as in the case of Thomas Nelson Page's story of the old negro who begged the judge not to sentence his wife for having laid him out with a flatiron because he knew that she was just "easin' her mind."

To the proposals formulated above, I would add two others: that the graduate schools be provided with funds for traveling scholarships so that the young teacher of modern languages may, early in his career, make the foreign contacts that are so important; and that entrance to the graduate school be restricted to persons whose records indicate some intellectual distinction and whose personality is not likely to handicap them as teachers.

I freely admit that some of the features that attract me most in the foregoing proposals cannot be realized without a radical departure from present practices and that they are to that extent only suggestive of what may come to pass. The lengthening of the Masters' course will meet with many objections, and a more severe analysis of teaching problems in the college will entail much hard work and many failures. An experiment in language teaching in the junior college was launched at Chicago seven years ago. Professor Bond presented his plan before this gathering last year and told you how weaknesses have been gradually eliminated and techniques improved. A reorganization of graduate instruction with a sharper orientation toward the rôle of graduate students as college teachers is an even more complex problem. However, if the representatives of the colleges who draw recruits to their faculty from institutions such as this give their approval of these suggestions, or of others that may be more practicable, the way will be clearer for those of us who are unwilling to plead guilty to all the indictments drawn up against the graduate school but who do perceive that as a teacher-training agency it leaves something to be desired.

In these notes I have deliberately avoided any discussion of the research side of graduate work because I take it for granted that few would deny its value for prospective teachers. It does not appear to

me that the preceding remarks involve any essential weakening of the work of the graduate school as a center for developing interest in independent investigation by properly qualified persons. In fact, so strong is the current in that direction that it requires some courage or considerable audacity for a member of a graduate faculty to proclaim that he is vitally interested in improving the quality of teaching in his field. We know that relatively few of those to whom we give graduate degrees distinguish themselves later as independent investigators. Perhaps some such suggestions as those made in this paper may result in making better teachers of the many without deflecting from their course the few who have the capacity and the continuity of purpose to combine teaching and research in the happy measure to which we all aspire but which only the rarer spirits attain.

God in his providence has not created many individuals capable of becoming great teachers, and relatively few of these seem nowadays to be drawn toward the profession. The graduate school cannot spoil these few; nor can it, by any program, convert ineffective persons into capable teachers. Its efforts must be limited to making its students more expert in the subject matter of their specialty, to developing in them a critical attitude and an appreciation of sound methods of work, to acquainting them with the problems ahead of them as teachers, and to giving them an opportunity to have some little classroom experience. If, in addition, the graduate instructors set an example of vigorous and effective teaching and show by their attitude that they have a respect for their own rôle as pedagogues, the graduate school will be making its maximum contribution to the training of college teachers. Even then it will probably not produce many great teachers; but if it reaches a point where it sets the mark of its approval on fewer poor teachers, much will have been gained.

CHAPTER XIII

SURVEY OF CURRENT METHODS IN THE IN-SERVICE TRAINING OF COLLEGE TEACHERS

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In connection with recent surveys in which the writer has participated, information concerning current methods in the in-service training of college teachers was obtained from 40 institutions, including 20 independent four-year colleges of liberal arts, 12 state teachers colleges, and 8 junior colleges.[1] The junior colleges included institutions under private control as well as tax-supported institutions. The 40 institutions surveyed are located in the following states: Illinois, Indiana, Iowa, Kentucky, Minnesota, Missouri, Oklahoma, Pennsylvania, Tennessee, West Virginia, and Wisconsin. The enrolments range from 300 to 800 for the independent colleges of liberal arts; from 300 to 2,000 for the state teachers colleges; and from 75 to 800 for the junior colleges. Personal visits were made to all of these institutions, and much of the information upon which this report is based was obtained during these visits.

One cannot participate in surveys of institutions of higher learning without realizing that a new emphasis is being given to the im-

[1] The institutions included in this discussion are as follows:

a) *Independent colleges of liberal arts:*—Hamline University, Lawrence College, Morningside College, Iowa Wesleyan College, Cornell College, Simpson College, University of Chattanooga, Union College, Allegheny College, Dickinson College, Oklahoma City University, Evansville College, Transylvania College, Kentucky Wesleyan College, Georgetown College, Centre College, Calvin College, Valparaiso University, West Virginia Wesleyan College, Mercer University.

b) *State teachers colleges:*—Eastern Kentucky State Teachers College, Moorhead State Normal School and Teachers College, Western Kentucky State Teachers College, Murray State Teachers College, Southeast Missouri State Teachers College, Illinois Normal University, Indiana State Teachers College, State Ball Teachers College, Glenville State Normal School, Fairmont State Normal School, Concord State Normal School, Marshall College.

c) *Junior colleges:*—Tennessee Wesleyan College, William Woods College, Christian College, Cumberland College, Bethel Woman's College, Campbellsville College, Potomac State School, New River State School.

provement of the quality of instruction at the college level. Until recently administrators have generally assumed that scholarship in a given field is adequate qualification for teaching in that field. The error of this assumption has asserted itself most emphatically in recent years, with the result that many institutions are beginning to focus attention upon methods and administrative measures designed to produce better teaching.

Before beginning an analysis of the methods now employed in the in-service training of college teachers, brief mention should be made of the tendencies which have been operating during recent years, as well as of the present status of college faculties with reference to training. The large increase in enrolments which occurred in our institutions of higher learning immediately following the World War affected markedly the faculties of these institutions. Enrolments increased more rapidly than colleges could obtain qualified staff members, with the result that large numbers of inadequately trained men and women were employed as instructors. During the five-year period immediately following the close of the war, the appointment of staff members with little or no graduate training resulted in a marked decrease in the average number of years of graduate training of the members of the faculties at many of the institutions surveyed. By 1923 or 1924, more than one-half of the teachers at some of the liberal arts colleges, and an even larger number at teachers colleges and junior colleges, had no training beyond that represented by a Master of Arts degree. During the past five or six years, however, the tendency of most institutions has been in the direction of increasing the training required of staff members. The pressure which has been brought to bear upon colleges by standardizing agencies, particularly by the regional accrediting associations, has been responsible in a large measure for the present tendency to increase training requirements.

As a result of the tendency to increase the amount of graduate training required of staff members, it appears probable that at the present time the average number of years of graduate training of the faculties of independent colleges of liberal arts is at least as high, and possibly higher, than it was in 1919. For the twenty colleges of liberal arts included in this investigation, the average number of

years of graduate training of the staff members is now 1.65. When staff members of all ranks are considered as a group, 38 per cent hold the degree of Doctor of Philosophy or the equivalent as represented by three years of graduate work; 50 per cent have completed two years, or more than two years, of graduate work; and 85 per cent hold the Master of Arts degree or its equivalent as represented by at least one year of graduate work.

One of the most stimulating experiences for a faculty member is the opportunity to take additional graduate training in the field of his specialization. The instructor who fails to avail himself of opportunities to maintain rather close contact with the development of his field by means of attendance at recognized graduate schools is probably rendering something less than the service his college has a right to expect. Information obtained from twelve of the independent colleges of liberal arts show that 75 per cent of the staff members of these institutions have been in attendance at graduate schools within the past ten-year period. Of those who have had less than two years of graduate training, 85 per cent have had some training within the past ten years.

All of the teachers colleges included in this investigation have developed from normal schools into teachers colleges during the past fifteen years, and most of them have developed into teachers colleges within the past ten years. When these institutions were normal schools, more than one-half of the staff members had little or no training above that represented by a baccalaureate degree, while only a very small percentage had any training beyond that represented by a Master's degree. With the transformation of these institutions into teachers colleges marked changes have taken place with reference to the training of those serving as members of the teaching staffs. Pressure has been brought upon staff members to continue their training in graduate schools. In the twelve teachers colleges investigated, the training of the typical staff member of ten years ago was that represented by the Bachelor of Arts degree. During this ten-year period the average number of years of graduate training of the staff members of these institutions has been increased by more than one year. At the present time the typical teacher in these twelve teachers colleges has had considerably more than one year

of graduate training, and more than one-third of the staff members have had two or more years of training beyond the Bachelor of Arts degree. Five years ago six of these twelve teachers colleges had no staff member with the Doctor of Philosophy degree or its equivalent. At the present time approximately 40 per cent of the department heads either have obtained the degree, Doctor of Philosophy, or have completed at least three years of graduate work without having obtained this degree. Three years ago one of the largest teachers colleges included in the group had only one staff member with the Doctor's degree. This institution now has seventeen Doctors of Philosophy on its faculty. A second teachers college, which four years ago had only two members of its staff with doctorates, now has thirteen members holding this degree.

The changes which have occurred with reference to the training of staff members of junior colleges, although not as great as those which have occurred in the case of the teachers colleges, have been in the same general direction. A majority of the junior colleges had their origin either in high schools or in academies. In the earlier stages of the development of junior colleges it was not uncommon for these institutions to change their status from that of a high school or an academy to that of a junior college without making any marked changes in the personnel of the teaching staff. The high-school staff or the academy staff became the faculty of the junior college. Frequently, junior colleges were organized with staffs drawn entirely from the high school or academy and with no member of the staff holding a degree any higher than the baccalaureate. With the accreditation of these institutions by the regional associations, this situation has been changed. The requirement of the North Central Association of Colleges and Secondary Schools that all instructors in junior colleges hold the Master of Arts degree or its equivalent, and the requirement of the Association of Colleges and Secondary Schools of the Southern States that at least three-fifths of the instructors in each junior college hold the Master of Arts degree or its equivalent, resulted in better-trained staffs for the junior colleges. At the present time the typical teacher in the eight junior colleges represented in this study has had approximately one-third of a year of graduate work beyond that required for the Mas-

ter of Arts degree. In terms of years of graduate training the typical junior-college teacher is almost as well trained today as is the typical instructor who teaches Freshman and Sophomore students in four-year colleges of liberal arts.

During the past ten years changes have occurred not only in the total amount of graduate training of staff members of institutions of higher learning but also in the amount of strictly professional training. Ten years ago there were few staff members of the independent colleges of liberal arts, aside from those in the department of education, who had, during their college or graduate work, taken courses in professional education. At the present time more than one-fourth of the members of the faculties of independent colleges of liberal arts have taken some courses in education, and most of those having taken such courses have received credit for at least fifteen hours in education. In general, those who have taken education courses are the younger members of the college faculties. Many of them have spent some years as high-school teachers before becoming college teachers, and the education courses in many instances were taken for the purpose of meeting high-school certification requirements. In both the teachers colleges and the junior colleges, the percentage of staff members who have not taken work in professional education is relatively small. The administrators of the teachers colleges believe that the professional point of view is so important that they deem it advisable to require courses in education of all staff members. Many of the instructors in the junior colleges, like the younger staff members in four-year colleges of liberal arts, have been drawn from the ranks of high-school teachers; consequently, they have taken courses in education in preparation for high-school teaching.

Very few colleges of liberal arts require the members of their teaching staffs who have not had courses in education to take such courses after their appointment as staff members. It is true, however, that many teachers who continue their graduate training after becoming members of college faculties elect one or more courses in education as a part of this training. In fact, college instructors are electing such courses in ever increasing numbers.

During the past five years a number of universities have organized courses designed primarily for college administrators and col-

lege teachers. The number of courses of this nature offered is increasing rapidly, as is also the number of college teachers and administrators enrolling for such courses. This is true particularly as it applies to courses in higher education offered at the larger universities during the summer session.

A number of state universities recently have co-operated with colleges of liberal arts, teachers colleges, and junior colleges in the organization of specific courses and lectures in college education for staff members of these institutions. The University of Kentucky presents an excellent example of a co-operative program of this type. In 1928–29, a course in problems of college teaching, meeting three times each week, was offered during the second semester. Members of the faculty of the University, as well as members of the faculties of a number of colleges, teachers colleges, and junior colleges within commuting distance of the University, enrolled for this course. During the same semester an evening lecture and conference series on "Problems of College Teaching" was organized for the benefit of those staff members who were interested in problems of college teaching but were not interested in obtaining course credits. The credit course was repeated during the summer for staff members of the colleges who had not been able to attend during the year.

The present situation with reference to the professional training of staff members in institutions of higher learning may best be summarized by the following statements: Teachers colleges generally require professional training upon the part of all staff members, but most staff members of such institutions have had a number of courses in education. A considerable number of the junior colleges require professional training of their staff members, but a large majority of the staff members of junior colleges have had such training. Very few of the liberal arts colleges require professional training of their staff members; but, although such training is not required, more than one-fourth of the members of the staffs of the latter institutions and more than one-half of the younger members of these staffs holding the rank of instructor have completed one or more courses in the field of professional education.

A method frequently employed to encourage staff members to

continue their graduate work is by means of leaves of absence with pay. The extent to which sabbatical leaves are granted to staff members for the purpose of further training differs with the type of institution. No one of the eight junior colleges included in this investigation follows the practice of paying staff members while on leaves of absence. A few of the four-year colleges of liberal arts grant leaves of absence for purposes of further study and pay a portion of the salary of the staff members during the time these are studying at the university. In teachers colleges, the practice of granting leaves of absence with pay is followed much more frequently than in independent colleges of liberal arts. Possibly one reason for this is that the teachers colleges have had to put forth very strenuous efforts to increase the training of the members of their staffs during their period of transformation from normal schools into teachers colleges. Nine of the twelve teachers colleges follow the practice of granting to one or more staff members each year a leave of absence for study on full salary for one semester, or one-half salary for an entire year.

The increased interest of college administrators in the in-service training of the members of their staffs is reflected by the extent to which they are willing to spend the funds of their institutions for the purpose of increasing the teaching efficiency of the staffs. A number of these institutions have set aside an item in the budget for paying the traveling expenses of staff members in attendance at professional meetings. This practice is followed much more frequently in teachers colleges than in independent colleges of liberal arts or in junior colleges. Other institutions, including some of all three types studied, have arranged for educational lectures and conferences on problems of college teaching. Certain evenings are set aside for a discussion of instructional problems, and prominent educators are brought to the institutions to lead these discussions.

A number of institutions have organized the entire faculty into a study group for the purpose of studying instructional problems. A plan frequently followed is to set aside one or two faculty meetings each month for this purpose. Routine matters are dealt with in other faculty meetings, and the discussion by staff members is limited to specially designated professional problems. Sometimes this discus-

sion centers around a book or published report dealing with some phase of college education. At other times it is based upon a report prepared by a faculty member who has previously been designated to study some specific problem of college organization, administration, or instruction. Frequently, special departmental or group conferences are held for the purpose of studying problems relating to the particular department or group of departments.

At one of the liberal arts colleges the president has organized a Pre-College Year Faculty Conference held just prior to the opening of the first semester. For this conference, which lasts two days, various members of the staff prepare papers on topics such as: "What Kind of Student Does the Institution Have at Present?" "What Results Do We Expect To Achieve in Our Students?" "What Constitutes Good Teaching?" "How May the Teacher Improve His Teaching?" Following the presentation of each paper, a discussion is held, led by some member of the staff other than the one who presents the paper.

At one of the junior colleges, faculty meetings are held twice each month, one of the two meetings being given over entirely to discussions of professional subjects. Each year a number of books relating to problems of college teaching are studied, and these books are discussed at some of the meetings. At other meetings the discussion centers around such topics as the interpretation, significance, and use of the Freshman intelligence tests, student personnel work, or the marking system of the college. Several times during the year speakers from other universities are invited to attend the faculty meetings and discuss instructional problems in their respective fields.

A few years ago the reader interested in the professional aspects of college teaching found it extremely difficult to obtain published materials dealing with instructional problems at the college level. During recent years, however, a number of valuable studies in the field of college education have been published. A recent bulletin of the Association of American Colleges contains a list of one hundred books designated as "A College President's Professional Library."[1]

[1] *Association of American Colleges Bulletin,* XVI (May, 1930), 307–12.

Following the publication of this list, a number of colleges purchased part or all of these books and made them available to staff members. At one of the colleges recently surveyed, the writer found in the library a shelf of books designated as the "faculty shelf." This shelf contained sixty books in the field of higher education, all of which had been purchased this year for the use of the faculty. This institution plans to continue the purchase of books, monographs, and other publications relating to college problems until this section of the library has been made as complete as it is possible to make it.

An interesting experiment designed to improve college teaching has been inaugurated by four denominational colleges in central Kentucky. The faculties of the four colleges meet in joint session four times each year for the discussion of their common problems. The co-operating colleges are Centre College, a Presbyterian institution; Georgetown College, Baptist; Kentucky Wesleyan, Methodist; and Transylvania, Disciples of Christ. The faculties of these four institutions meet frequently as one group. Among the purposes in the establishment of these joint faculty meetings has been that of securing the strength of action which comes from unity. The four colleges, although competitors in so far as obtaining students is concerned, are one in the appeal which they make to persons who believe in the type of institution which the denominational college represents. A second and major purpose of this co-operative program is to secure for the individual teachers that opportunity for exchange of ideas and discussion of special problems with others interested in the same field which is frequently denied to members of the faculties of small colleges. On the faculties of most small institutions there are only one or two men in a single department. Members of such a department lack the stimulating contacts with others in their own field of intellectual effort which are available to members of the faculties of large universities. The plan of co-operation adopted by the Kentucky colleges includes joint faculty meetings with the representatives of the four colleges and group faculty meetings for instructors in each field. These meetings are designed to promote an interchange of views. The institutions represented report that the group meetings have led to further discussion through correspond-

ence and sometimes to special meetings, which have stimulated the instructor and relieved him from any sense of isolation. The four colleges are now considering the joint publication of a quarterly journal which will contain a record of the group discussions and investigations during the preceding quarters.

In a few institutions alumni opinion concerning the quality of instruction given by the staff members has been secured by administrative officers. The presidents of the institutions obtaining such information state that they have found the information thus obtained valuable not only as a basis for a discussion in faculty groups and between administrative officers and individual instructors but also as a basis for decision with reference to faculty promotions.

The administrative officers of a few of the colleges have attempted also to obtain opinions from students with reference to the efficiency of instruction of the members of the teaching staffs. This latter method of procedure appears to have been of doubtful value in most of the cases where it has been employed. Some of the presidents state that the morale of the faculty suffers when students are requested to provide administrative officers with judgments concerning the efficiency of their instructors.

A method frequently employed of utilizing student opinion as a basis for improving instruction is for individual staff members to request their students to rate them on a number of points related to teaching efficiency. The points rated include personal qualities, traits, characteristics, and teaching techniques. Rating-scales, when used in this way, are not designed to evaluate teaching efficiency from the point of view of the administrator; nor are the results used as a basis for promotion or demotion of teachers. The function of the scale is to enable the teacher better to adjust his procedure to the interests and needs of his students. The teacher thus rated is permitted to see himself as the students see him. At most institutions where these scales have been used by instructors, it is felt that ratings must be anonymous to be valuable; consequently, no names or identification marks are placed upon the rating-sheets. The use of the scale is voluntary upon the part of the instructor, although frequently administrative officers encourage instructors to use such

scales. The entire results of the rating remain in the hands of the instructor to use as he sees fit. In general, the administrative officers of colleges where students have rated instructors agree that those instructors who voluntarily undertake to secure ratings from students profit from such ratings.

For a number of years elementary and secondary schools have had definitely organized programs for the supervision of instruction. Only recently has such supervision been attempted at the college level. The number of colleges attempting anything in the nature of supervision is still relatively small.

At those colleges which do have supervisory programs, deans trained in the field of professional education usually serve as supervisors. At only a few of the colleges investigated does the supervisory program include classroom visitation by the supervisor. In a number of institutions supervision takes the form of classroom visitation by teachers. One junior college, two teachers colleges, and two independent colleges of liberal arts report that definite arrangements have been made for members of the teaching staff to visit classes conducted by other members of the staff within the same institution. It is the opinion of the presidents and faculty members of these institutions that valuable results have been obtained from this method of procedure. At one institution where this plan is followed, the dean first visits classes and observes the teaching under way. Certain weaknesses are noted. At a later conference of the teacher and the dean it is suggested that the teacher visit classes conducted by instructors of other institutions who are particularly strong with reference to methods in which the teacher under observation is weak.

The program of supervision carried on at one of the colleges may serve as an illustration of some of the methods employed. At this institution each teacher was notified the day before his class was to be visited. The class was observed for the entire period. A few notes were made by the supervisor after his return to the office. The teacher was then invited to the office for a conference. First, brief comment was made concerning the commendable aspects of the class session. Then, suggestions for the improvement of teaching were discussed. At the beginning of the development of this super-

visory program a number of objections were registered by some of the teachers to having their classroom teaching observed. These objections ceased, however, as the teachers learned the constructive nature of the methods of supervision employed. During the latter part of the first year of this program a splendid spirit of co-operation on the part of the teachers was noted, and very frequently classroom visits were requested by teachers. The president of the college states that the results of this supervisory program were as follows: (1) An improved professional spirit was manifested by increased interest in faculty meetings. (2) There was an increased use of objective tests, and an improvement in the marking system of the institution. (3) Improvements were brought about in the administration of student personnel problems. (4) A large percentage of the staff who had not formerly been greatly interested in problems related to the improvement of instruction became so interested that they registered at universities during the summer for courses in teaching methods and problems of college education. (5) A marked interest was created upon the part of most of the members of the teaching staff in literature in the field of college instruction.

A method employed by one of the independent colleges of liberal arts to improve the teaching process was that of reducing the teaching-load of a number of staff members selected to serve as supervisors of instruction. One staff member was selected from each of the major fields such as social science, physical science, etc., who was expected to assume primary responsibility for the improvement of instructional activities in that field. The men appointed to serve as supervisors visited the classes of the younger members of the staff and consulted with them concerning methods of procedure and techniques of teaching.

Several of the colleges are encouraging the use of the objective or new-type test as a device for in-service training of faculty members. The new-type test seems promising, although it is still comparatively undeveloped and probably ought not to be used as the only method of measurement. Frequently, faculty members need to be guided in their use of the new-type examinations so that they may be certain of covering basic understandings as well as testing factual knowledge.

The new-type test techniques have been found to be relatively easy to utilize, and as a result of this the extension of the use of objectively scorable examinations has been very rapid. While these tests are used most frequently in the departments of education and psychology, in more than one-half of the institutions studied such tests are used also in one or more of the subject-matter fields in addition to those mentioned. There appears to be considerable doubt as to the possibility of making the new-type test a substitute for the essay type of examination. Many of the college teachers who have used such tests believe that objective tests, by their very nature, have very little place in advanced college courses, although they recognize their value in the more general courses of the Freshman and Sophomore years.

A few colleges are introducing, as an instrument for measurement, a comprehensive examination administered to the student during his Senior year, at the time of his completion of a whole field of study. This type of examination is valuable in that it tends to divert the emphasis from the passing of specific courses to the mastery of a subject or field. The use of such examinations encourages cumulative study over a long period of time and places increased responsibility upon the student for the direction of his own education. The development of thought-provoking comprehensive examinations for the Senior year supplements in a very satisfactory manner the use of the new-type objective tests.

I shall now summarize briefly the results of this investigation in the in-service training of college teachers. The demands for teachers to meet the needs of increased enrolments immediately following the close of the World War resulted in a lowering of standards with reference to the training of staff members. A new emphasis has been given, however, during the past five or six years to the training of teachers while in service. As a result of this emphasis, the average amount of training of staff members is now as great or greater than it was before the war. Some improvement has been made in colleges of liberal arts and in junior colleges, but the greatest improvement has been in the teachers colleges. Increased training in subject-matter fields has been accompanied by an increased tendency for staff

members to study methods of teaching and problems of college organization and instruction. Colleges are encouraging such study by granting leaves of absence with pay, by organizing faculty groups for study purposes, and by securing counsel and guidance from staff members of the larger universities. A few institutions have developed definite machinery for the supervision of instruction. Many institutions are attempting to devise more satisfactory methods for measuring the learning process. There is much evidence to indicate that the colleges are at last awake to the need for the development of methods of training their teachers while in service.

CHAPTER XIV

EFFORTS TO IMPROVE TEACHING IN FUNDAMENTAL COURSES AT THE OHIO STATE UNIVERSITY

GEORGE W. RIGHTMIRE

A presentation of this subject will call for (1) preliminary proceedings of a personnel nature; (2) a study of the activities of the junior deans; (3) the activities of the supervisor. Or, stated in another way, this study will call for a discussion of (1) preliminary devices of personnel nature for learning all that is possible about the incoming student; (2) the interviewing of students by (*a*) junior deans and (*b*) teachers in charge of sections; (3) the functions of the supervisor; (4) the conferences of the junior deans in the organization known as the Junior Deans' Council; and (5) conferences of the supervisors in a voluntary meeting at intervals in which the teaching in departments in the various colleges of the University is brought under general discussion.

PERSONNEL MATTERS

Some procedures have been set up to find out about the incoming student. These are, briefly, the application for admission which calls for the student's activities, the subjects of study previously pursued, the success therein, the reading done, the preferences in activities of various kinds, his family history, his health history, his purpose in coming to college, etc. (the items of which are generally known to college people everywhere), and the complete high-school history with observations and recommendations by the principal. This admission application comes to the University examiner before the student comes to the University.

During the Freshman Week, sections of students are in charge of faculty leaders, and an interview is held with each student. A blank form is issued to the faculty leader suggesting eight items about which he should make inquiry in his interview, and thereby further

facts are learned about the student. The judgment of the faculty interviewer is also put down.

A third device includes some survey tests and some procedures to determine placement at the opening of the year's work, the aptitudes of the student, and an intelligence rating—all well known.

JUNIOR DEANS

In these three ways much information about the student is obtained, and all of this is furnished to the junior dean of the college in which the student registers. The junior dean is an official, created in each of the five larger colleges of the University, whose work lies particularly in the Freshman area, although he may carry on some activities in the Sophomore area. However, since the Freshman area is so large, it has been found that the junior dean's activities are absorbed in that group. Where there are from three thousand to thirty-five hundred Freshmen each year, divided largely among these five colleges, it is seen that a junior dean has a great responsibility and an almost impossible task in coming into contact with the Freshmen alone.

The junior dean comes into active relationship with all teachers in the Freshman area, working primarily through the chairmen of the departments, and furnishes to each teacher all the preliminary information obtained about the Freshmen enrolled in his classes. He undertakes to do many things. He interviews especially the students who, in the foregoing ways, have been shown to be weak or lacking, and students whose records show that they are unusually capable. And he undertakes to make it possible for the poor student to get attention of a special nature from the teacher, and likewise attempts to provide extra procedures for the bright student. In between there is a large number of students who will get on fairly well under almost any kind of procedure but with whom the junior dean attempts to form contacts.

INTERVIEW SECTIONS

One device that the junior deans have been using is that of interview sections. Here the teacher in charge agrees to have a friendly interview with each student in his section, an interview of say,

fifteen minutes; and future interviews usually grow out of this first one. The chief purpose is to strike up an acquaintance between the teacher and student. It is of a friendly nature entirely, and the meeting is expected to give the student a better view of the teacher, and vice versa, and make it easier to go on with the ordinary class work. It is a friendly talk about the student's activities before coming to college, the teacher knowing about these from the information sheets received from the junior dean. The teacher has gone over all this background material and made the acquaintance of the student in that way before the interview, which, therefore, is carried on by the teacher in an enlightened way. Besides the acquaintanceship and mutual understanding and appreciation which it is hoped will grow out of this interview, there is the purpose also of discussing the subject matter being studied by the class. The teacher uses this occasion to point out the best method of study, both direct and collateral, and finds the opportunity to do this in the comments which the student may make about how he is getting on with the work. This interview is expected, therefore, to take up the difficulties of the student with the course, the questions the student may have about objectives and methods, and whatever else would normally develop in a discussion of ways and means of student progress in the course.

Usually it has been found that this first interview leads to later ones; and such subjects as conditions at home, living conditions in the University, financial difficulties, social advantages, the life generally of the individual as a student, the plans of the student for the future, his hopes and aspirations—all of these come into the discussion more or less, depending upon the student and also the teacher. In many cases it is felt that the student is oriented by these friendly discussions; and therefore his progress in the work can be plotted more intelligently, and his spirit about the whole matter feels a stimulating effect.

APPRAISEMENT OF INTERVIEW

An interview section may be measured against a non-interview section taught by the same teacher, the student quality and progress being about the same. Various methods of testing the effect of the

interview have been proposed and in some cases tried. In one case each student in an interview section was paired with a student in a non-interview section on the basis of certain criteria, and objective tests were used in the mid-term and final examinations, uniform for all sections. The average class achievements for 146 pairs of students divided into groups were ascertained for those that were interviewed and those that were not interviewed. The junior dean in whose college this experiment took place writes about it as follows:

> The figures show that on the basis of 146 pairs of students, there was a gain of over 5 per cent on the percentage grading scale for the students interviewed. This means approximately a half letter grade on the present grading scale. While the average gain for the group as a whole is significant, the gain made by certain individuals is quite striking. This study gave some very illuminating data on how instructors differ in their ability to influence the quality of learning with students of different levels of ability. This study has opened up a very fertile area for research in the field of instruction.

The junior dean always confers with the teachers in charge of these interview sections concerning their methods of procedure, and has obtained on various occasions the teacher's estimate of the way in which the interview has influenced the student and the teaching. The students have also been asked to make anonymous estimates of the interviews; and it is surprising how nearly unanimous the student sentiment is to the effect that the interview has been helpful, some in one respect, others in another. There is considerable student opinion that the interview has made their progress in their study of the course much more satisfactory and much more intelligent; and from this evidence it may be said that the interviewing is a device for the improvement of teaching, since almost anything which develops a more sympathetic and understanding relationship between teacher and student is reflected in the educational activities of both teacher and student.

JUNIOR DEANS AND TEACHERS

The junior dean is thus in contact with a number of teachers and frequently has visited the class and has observed the way in which the teacher does his classroom or laboratory work. These visits are unobtrusive and may or may not be by previous arrangements. As they have become more frequent, the sensitiveness of the young

teacher has worn away and there is a considerable spirit of welcome for these visits. The junior dean at intervals, or soon after visiting a class section, will confer in a friendly way with the teacher about the class attitudes, the methods, and techniques of the teacher. This must be done tactfully, and the junior dean must have a clearly defined objective in his mind. The whole purpose must be to give sympathetic support, stimulus, and encouragement to the teacher to make such changes in his manner and methods as the situation seems to call for.

It is not the purpose to give orders or to make severe criticisms, but solely to have a friendly discussion out of which may come helpful suggestions to the teacher, who, ordinarily, would be in a receptive mood and who also would be expected to support any of his procedures which may be called in question. The junior dean and many of the teachers are, therefore, in an intimate relationship of interchange of information about the student derived from a variety of sources, and of ideas about conducting the work. He also endeavors to measure the teaching load as it is influenced by the interviewing of students, so that eventually the University may know the value of this interviewing program and what account it must take of this program in fixing teaching-loads and in appraising the teaching accomplishment. Other ways in which the junior dean and the elementary teaching staff are helpful and stimulating to each other might be enumerated, but it is not thought that it is necessary to detail this area of activity further in this paper.

JUNIOR COUNCIL

The Junior Council is composed of the junior deans, the director of the Bureau of Educational Research, the personnel member of his staff, and the president of the University. Weekly meetings are held in which discussion has been given from time to time to the device of the interview section, the interview by the junior dean with students, the methods of the junior dean to produce the most desirable progressive effects in the Freshman area, the relationships between the junior dean and the teaching staff. There is a continuous running appraisement of all of these activities carried on through studies made by the junior deans, by the staff of the Bureau of Edu-

cational Research, and by the teachers themselves. In these ways the whole area is kept in a state of intelligent ferment from which the whole program of dealing with the Freshman student feels a potent stimulus.

EDUCATIONAL PSYCHOLOGY

I. FRESHMAN READING ABILITY

At this point I might speak of a special effort that we are making with the Freshmen who in the survey test during Freshman Week are found to be deficient in their ability to read. The division of educational psychology has prepared a program of reading and a booklet of selections carrying certain instructions and indications which a student is to follow. During the first quarter the student appears at intervals and, in the presence of an instructor, shows how he is progressing with this booklet. The whole device is expected to train in the ability to gather the meaning rapidly from the printed page. This is tested by the instructor, and the student is dismissed when he has reached a certain stage. The benefits of this course, which is entirely incidental and is not for credit, are expected to appear in the work done by the student in his regular courses of study. A variety of reasons for student inability to get the meaning from the printed page have been discovered, and corrected, so far as possible. This can hardly be spoken of as an improvement in teaching so far as the teaching relates to the usual courses, but it is a variety of teaching in reference to a kind of ability which is indispensable for student progress and may, therefore, I think, appropriately be mentioned at this point.

II. THE PROBATION STUDENT

This same division also picks up the student at the end of a quarter of the Freshman year if he should have a probation standing, and, by a period of instruction, endeavors to improve the ability to study by getting at the crucial defects in a student's habits or methods of attack. Much of a remedial nature has been done. These two activities of this division may be thought of as remedial, and yet they are of the highest type of teaching and properly deserve mention here. Some students are set on the right track, and very few students have failed to derive benefit from this work. Not all of

them, of course, can be brought to a desired stage of attainment, and our experience shows that there is not much to be accomplished with the student below the twenty-fifth percentile.

III. EXPERIMENTAL TEACHING

This same division has, during the past year, been carrying forward experimental studies to determine the best types of teaching procedure. Five sections of students were carried through the course with the personal interview and re-interview method as the features of the technique. In these interviews and re-interviews the teacher and student discussed whatever came to the surface; and a considerable part of the interviews revolved around the subject matter, the difficulty of the student, student methods of learning, and all of the matters relating to student difficulty or student success. Then there were five sections that used the "test-teach-test" method. This consisted in giving a pre-test before each section of subject matter, then teaching on the basis of shortcomings revealed, then retesting to see if deficiencies had been remedied. The retest occurred from time to time through the quarter and again at the end.

The "committee" technique was tried with five sections, this plan consisting of having students meet in small committees two days a week with a rotating student chairman, but under the supervision of the instructor and with frequent visitations from him, instead of meeting with the instructor every day. Then there were seven "control" sections taught by the usual informal lecture-recitation method. In all, twenty-two sections, enrolling 595 students, were carried along in these experiments. Of course, a great variety of questions came up for study in this connection, and a variety of methods of testing results was employed.

In accumulating data in regard to the improvement in teaching, the students were asked to rate the instructors, quarter by quarter progressively. The instructors involved in all these experimental sections were frequently called together for conferences about the work; and certain conclusions were reached in these discussions, and the teachers endeavored to improve the quality of their performances. It was found that the number given the rating "excellent" increased 10 per cent during the past year. The other ratings

were "good," "average," "poor," "very poor"; and each of these decreased somewhat through the year. Eighty-three per cent of all the ratings for the Spring Quarter, 1930, were in the groups "excellent" and "good." So much for student rating.

One method of measuring the effects of these experimental procedures was that of studying student grades, quarter by quarter. There is clear evidence coming out of this study of a decrease in failures from 5 to 1 per cent and a sharp increase in the marks "A" and "B." This improvement in grades has taken place without any lowering of standards, and this has been established by considering various objective tests. On the contrary, it seems certain that there has been a decided raising of standards and at the same time a noteworthy increase in the accomplishments of the students as shown by grades.

By these experiments the division feels justified in presenting tentative conclusions in this way: (1) It has led to an intensive study as to what is, and what is not, important in the course. The construction of the examinations given has forced a careful consideration of what the fundamental ideas really are. (2) The teaching has been unified inasmuch as the students now obtain the same essential facts no matter what sections they may be in, and the instructors have threshed out their points of view in their conferences to the extent that they are agreed about the essential facts to be presented in the work. (3) An analysis of the course has been proposed to ascertain at entrance what is difficult and what is not; what is being learned; and where, on the basis of such information, teaching can be still further improved. (4) The marking standards have been unified and at the same time lifted. To our surprise there has been a decrease in failures and an increase in the higher marks. (5) The experiment has permitted different techniques of teaching to be comparatively tested, and these have been subjected to an objective checking. (6) About two thousand objective questions on the course have been compiled and classified by subject and given critical study both theoretically and experimentally, and a reservoir of examination "stuff" has thereby been created. Next year the experiment will be continued. There will be a single experimental technique composed of the points considered best in all of the techniques men-

tioned above with further experimental features. The experimenters have certain definite thoughts about how the experimental work will be conducted, and they are very hopeful of solid and continuous progress in the improvement of the educational procedure.

One of the suggestions proposed for next year's work is that additional motivation be given by excusing "A" and "B" students, say one day a week. They will be expected to keep the pace, nevertheless, on account of their greater ability. Further, such excusing will give the instructor larger opportunity to deal with the students of the lower grade. The committee plan and the interview plan are to be continued, the former for the top-end students and the latter where adjustments seem to be called for.

SUPERVISORS

What we regard as a very important institution in the various departments dealing with a large number of students in fundamental courses is that of supervisor of the elementary courses. This has been growing up through the years, and much experience has been accumulated with it in the largest departments, such as chemistry, mathematics, English, and economics. A large teaching staff is required in these fundamental courses, and the practice is to place these courses in charge of one member of the staff. This plan has been built up in chemistry for twenty-five years, for a shorter time in the other departments mentioned, and more recently in many other departments. It has come on as an outcome of a more enthusiastic study of teaching in these fundamental areas and because of the greater financial aid recently extended to those areas. The purpose of increased financial aid, of course, is to give better salaries to the good teachers already in service, to bring in to the staff teachers of better quality, and to increase the number of teachers to the end that class sections may be brought to a more reasonable size. A large number of persons is required to do the teaching in the fundamental courses in a given subject. These teachers have diversity of ability, preparation, and experience, and have a variety of conceptions of the subject matter and the relative importance of different phases thereof. Accordingly, the Freshmen have been receiving many varieties of treatment.

To improve this whole area of activity, the supervisor now comes forward and, with his staff, discusses the subject matter of the course. The importance of its various features; the way in which it should be distributed through the quarter; the advance in the course that should normally be expected from week to week; the way in which, generally speaking, it should be presented in class and in laboratory; the objectives to be aimed at in the work—all these are the subject of discussion and conference. Outlines and assignments and something about methods of presentation are agreed upon, so that some unification is given to the thing taught as well as the teaching procedure. Of course, there is no purpose of putting restrictions upon initiative so long as the enthusiasm of the instructor seems to be intelligently directed. In fact, one purpose is to encourage initiative; and all proposals from the group are welcomed and the experiences with such proposals become the subject of future conferences and are very stimulating.

The subject matter having been thus cared for, and the methods and objectives having been considered, the supervisor holds frequent conferences individually with his teachers and endeavors to be of help to them in carrying on the work. The supervisor also visits classes and laboratories and carries on sympathetic conferences of a constructive nature thereafter with the teachers, complimenting them where possible, and in the most friendly way considering teaching procedure which may be faulty. The procedure and the progress are always under consideration. The relation between the supervisor and the teachers is very close and the atmosphere such as to encourage every confidence between them. The supervisor will frequently come into conference with the junior dean for reciprocal aid and stimulus and information. He will keep in touch with the chairman of the department and, so far as seems desirable, with the dean of the college, so that all the persons in authority may know what is going forward, what the purposes are, and what results are being expected and, so far, achieved.

The status of the supervisor is not officially recognized in the University records. He appears on the official staff list as a professor. His function as supervisor is intradepartmental, and there-

fore the attitude of the chairman of the department must be entirely cordial.

Supervisors from about twenty-five departments have voluntarily come into periodical conferences during the past year, having a chairman and a secretary. Subjects for discussion are generally announced in advance, and one or more persons are named to lead the discussion or symposium. Many ideas have been presented in these conferences, and much progress has been made toward an understanding of the problems involved in the Freshman area and of the contribution which may be made to their solution by the supervisors. It will be remembered that these twenty-five departments lie in seven colleges; and the results of this discussion of the problems of teaching and organization of subject matter, and the development of procedures, should be of greatest significance. It should have some effect upon breaking down the barriers which tend to grow up through the years among colleges, which, I think, is not confined to the campus of the Ohio State University but is probably a condition met with in large universities generally. In this way the unity of the teaching problems will become apparent and an intelligent body of opinion will in time become the common property of all of the departments. The transfer of students from one college to another will incidentally be facilitated, and the progress of the student in any college should be greatly expedited.

The supervisor should make an important contribution in the discussion as to whether teachers are measuring up and whether they should be retained or not. His advice should be of great weight and perhaps should be the determining factor. The great body of his work, however, will lie in the field of the promotion of a better knowledge and practice of the principles of learning, the improvement of teaching, and the organization, unification, and assignment of subject matter.

SUMMARY OF DUTIES AND QUALITIES

This group of supervisors asked the department staffs, near the end of the year, to give free discussion to certain tentative conclusions reached by the group and based upon their informal conferences extending over the year. This group had been discussing five

large matters interesting to each supervisor, namely, (1) objectives of Freshman courses, (2) content of Freshman courses, (3) objectives of supervision, (4) selecting instructors, and (5) status and duties of the supervisor. The department was asked to consider the conclusions in department meeting, "to the end that Freshman teaching may be improved." The conclusions follow:

1. The duties of the supervisor should be so arranged that he will have opportunity for research in the problems of the subject matter of the field or into the problems of instruction.

2. The supervisor should have executive responsibility for the conduct of the introductory courses under the policies of the department and the college, that is, planning courses, visiting classes, conferring with the teachers, and reporting conditions to the chairman of the department.

3. The personal teaching load of the supervisor should be adjusted to his supervisory load. Whenever possible, he should teach a section himself.

4. The selection, promotion, and dismissal of the teachers in the introductory courses should be made with the advice of the supervisor.

5. The position of the supervisor of introductory courses should be officially created. This position should be recognized as having major faculty status and worthy of becoming the object of a career.

6. In the selection of supervisors, the major weight should be given to the qualities of forcefulness, ability to handle people, substantial scholarship, ability to lead and aid young instructors, profound interest in teaching, and a scientific attitude toward problems of instruction.

NEED FOR TEACHER-TRAINING IN SERVICE

With reference to the improvement of the quality of teachers and teaching in the fundamental areas, possibly the experience at the Ohio State University has not been different from that in other growing institutions. For ten years an influx of students has been making it necessary to provide more teachers. The financial conditions of the institution made it necessary to get cheap teachers, and the available revenues have not kept pace with the growth of the

student body. After a period of experience of this kind the University's educational conscience became somewhat callous; and gradually it became accepted that there must be in each large department a considerable number of young people, graduate assistants, assistants, instructors, with little or no previous experience in teaching, who would have to be turned loose upon the large group of Freshmen each year and replaced two or three times during the year! It came about, therefore, that the Freshman teaching in large universities, generally speaking, was the worst that could happen. Now, in order to improve this situation, more money would be needed; and, having obtained it, the next step, of course, would be to improve the quality of the teaching staff. This might be done by dismissing some of the younger and more inexperienced people and employing others who were more experienced. This is not always easy to do because the rapid growth of all educational institutions has made a call for teachers which it has never yet been possible to answer with teachers of high quality and ample experience.

EFFICIENCY TESTS FOR FRESHMAN COURSES

Our experimentation is motivated by certain tentative standards for the fundamental courses in the Freshman area. The thought is that such course is well conducted if—

1. It provides facilities for bright students.
2. It makes provision for slow and unadjusted students.
3. The instructors have a scientific attitude toward instruction and normally carry on experimentation in instruction.
4. The instructors use objective tests.
5. Each instructor interviews all the students in each section.
6. Students are taught how to study each particular course at the beginning of the quarter.
7. Personnel information is provided on all students for each instructor.
8. All teachers are experienced or have received pre-service training.
9. The supervisor has a voice in the selection, retention, and promotion of the instructors.

10. The supervisor visits classes and labors to improve the teaching performance.

11. The supervisor has time for supervision and research in the field of his subject matter and in the field of instruction.

12. The fundamental elements of course content are determined by the faculty as a whole and are taught in all sections.

These standards will constantly be subjected to modification or restatement, or recall, as our experience may suggest.

The graduate school is a kind of reservoir as well as a training agency. There are many graduate students in the institution, some of them on scholarships, others doing part-time work for the University. A careful study of the students in the graduate school shows that probably 75 per cent expect to go into teaching and that a very large percentage of this number have had teaching experience in secondary schools or in smaller colleges, or elsewhere; the average experience found for such persons was about three years. Therefore, the use of graduate assistants for teaching does not bring to the work so raw a product as the term "graduate assistant" may imply. That is also true of assistants. The difficulties in connection with importing high-quality teachers for the elementary field of teaching, therefore, compel the University to provide means for improving the teaching while the service is going on. A considerable number of such teachers pursue courses in "Principles" in the College of Education, and receive encouragement in this direction from the department.

All the devices briefly described above covering the activities of the Freshman Week, the junior deans, the supervisors, the department chairmen, and the deans are on trial; and all of them have shown that the efforts thus put forth should be continued and progressively developed. We are holding on to every one of these agencies and are spending time, organization, ability, sympathy, and money so that they may demonstrate their ultimate possibility of achievement.

ILLUSTRATIONS

Some illustrations of what we regard as improved procedures can be given. First, I shall mention elementary botany. The experience of the department led to the following conclusions:

1. That elementary botany should be taught from a functional point of view. That it should be a preparation to meet the biological problems in life rather than a preparation for advanced courses in botany.

2. That training in the scientific method of thinking should be one of the major objectives of the course.

3. That the size of classes should be such as to permit effective class discussion. Sections at present are limited to thirty-five students.

4. That laboratory work should be properly correlated with class discussion and should serve a very different purpose from what it had been serving in the past.

5. That all teaching be done by trained instructors instead of using untrained graduate assistants in the laboratory as had been done in the past. Under the former plan a student very frequently had one instructor in lecture and another in laboratory.

These ideas were given a thorough test in 1928–29 by organizing a limited number of experimental sections of elementary botany each quarter through the year. The class time for the experimental sections was reduced from seven hours to five hours per week, each class period being one hour in length. The lecture and laboratory were no longer separated.

The results of this experiment proved so satisfactory that the whole program in elementary botany has been organized on this basis. The supervising professor in this area holds staff conferences, prepares teaching outlines, has individual conferences, and has young instructors visit the classes of more experienced ones. The supervisor frequently visits classes. All of these activities have met a very fine response from the instructors. The department has released a considerable part of the time of the supervisor for this work. This method of teaching requires very definite assignments for previous student preparation and the accumulation of materials for demonstration purposes during the class hour. The Bureau of Educational Research has closely co-operated with the Department of Botany in a study of the program.

A similar program has been plotted for zoölogy. In the Summer Quarter of 1929, a reorganization of the work took place, and it was

carried on on an experimental basis. The results were so satisfactory that experimental sections have continued through the past year. During the year the members of the staff who were teaching zoölogy under the usual plan visited the experimental classes where the new procedure was going on and attended the conferences of teachers under the direction of the professor who has been made supervisor of the elementary work. Through the year the procedure has been stabilized and the teaching group has had the opportunity to become familiar with the new requirements, and all of the elementary work swings into the new plan for the coming year. There will be only minor differences in this department from the procedures already approved and carried forward by the Department of Botany, and the conclusions reached above for botany are regarded as fundamentally applicable also to the work in zoölogy. The attack on the subject from the viewpoint of function apparently gives the student a new interest and a new understanding and cultivates a method of thinking about the subject which is also an asset in the advanced study of the subject.

A further detail of this experiment consists in setting up a special laboratory for individual instruction and in taking from the experimental sections and sending them to this special laboratory, two types of students, namely, those who are not making satisfactory progress and who, therefore, seem to need supplemental instruction, and those who are displaying unusual ability and can, therefore, carry on individual projects. Those who show special aptitude for independent work in the first elementary course will be grouped in the second course for special treatment. It may be said that such placement procedures are in effect in various departments. The results obtained by putting into a section students who have an unusual degree of ability or aptitude are very encouraging, and it also seems to be our experience that the placing of slow students together in a section that travels at a moderate pace under special methods accomplishes the best results possible for such students.

One more illustration of supervision may be given, and that is in the Department of Romance Languages. A supervisor was added to the department staff a year ago, a man of large experience in dealing with elementary French and Spanish students, and who believes

that there is no other position in the University so attractive as this. He defines the function of his position as that of "humanizing and harmonizing instruction in the Freshman area in such a way as to raise the standard of efficiency of teachers and of proficiency of students." In pursuance of that purpose he surveyed the courses, teachers, texts, methods, and objectives. The courses as advertised were found worthy. He derived an impression of the teaching staff which he followed up through the year, and his later recommendations have been followed. The attitude toward the work and toward the student has had great weight in determining the selection, and the effort of the teacher to enter into the proposed new conception of what the student should carry away from these elementary courses was also an important factor.

The objectives which he sets out in order of importance in the teaching of a Romance language are, first, the ability to read and get the meaning of the foreign language perfectly without translating; second, the ability to understand simple language when it is spoken; third, the ability to speak the language in simple conversational form; and fourth, the ability to write the language clearly. These objectives are expected to supersede those coupled with the grammar-translation method of teaching, which, it is admitted, gave much information about the language but no ability to use the language itself. Under the old method, in his opinion, it was difficult to keep either the student's interest or his respect.

Now it was not easy to convince some of the instructors that the enumeration of grammatical rules and forms was not in itself an objective. The thought was to drop the emphasis on grammar and translation and to make the student attempt to think in the language by using it, and to teach only the grammar necessary for recognition purposes. This might be called the "oral" method. It met some initial criticism but proved its merits through the year. Clearly, it requires better teachers to teach by the oral method; but that this should be the method seemed clear on the ground that if the approach through the ear is not utilized, there is a loss of about 50 per cent of the effort made in teaching. This seems elementary because we learn our native language by that method; and if it works in English, it should work in other languages.

The supervisor has spent a great deal of time in visiting classes. There are staff conferences, conferences with individual teachers, proficiency tests worked out with the co-operation of the Department of Principles of Education, and both supervisor and instructor do much in the way of personal interviews with the students. The supervisor also teaches. The next year he will have a section of students who have been rather persistent failures in attacking language. He feels certain that his methods will enlist their interest.

Another thought is projected for next year, and that is the use of the radio station in reaching the Romance-language classes of the high schools of the state. A professor in Spanish and another in French, who are native to the language, will, at announced times, give lessons to which the high schools equipped with radio will be listening in. Correct pronunciation of the simple exercises of the language at the beginning, becoming progressively more difficult, will be carried through by the professor. These exercises will be centered upon a feature of geography, or history, or literature, or something else with which the student is familiar, so that the language used may have concrete application to something within the student's experience. Thus it is expected that the method of study, the subject matter of study, correct pronunciation, and a clearer conception of what can be done through the oral method may be carried out to the high schools of the state for the benefit not only of the pupils but also of the teachers. Information, booklets, and directions for high-school teachers will be furnished upon request, and in this way the Department expects to furnish a service which will be reflected later in the capacity and attitude of students coming from these high schools to the University. We are endeavoring at this point to improve the teaching not only in the University but out in the high schools.

CHAPTER XV

IMPROVING INSTRUCTION IN THE UNIVERSITY OF IDAHO

FREDERICK J. KELLY

Last year I was asked to make for the National Association of State Universities a study of significant researches recently made or now in progress dealing with higher education. This study was devoted largely to researches in the field of methods of college teaching. It revealed that extensive pedagogical activity is going on among college teachers throughout the country and that important results are accumulating.

It would have been more interesting and probably more worth while to tell of these researches than to tell of the work at the University of Idaho. However, I was asked to discuss the topic "Methods of Improving Instruction at the University of Idaho," and I accepted the invitation.

The University of Idaho is essentially an undergraduate institution with a student body of approximately eighteen hundred students. It is located in a small town, so that the interests of the University are dominant in the community and the students are but little distracted by what goes on outside the University's environment. Relatively few students live in their own homes, and practically all others live in state-owned dormitories or fraternity and sorority houses. Thus, the student population is easily reached by influences originating within the University, and the situation offers one of the best opportunities available to build up a student morale for a high order of undergraduate scholarship.

It was because of the peculiar appeal of this situation that I accepted the presidency of the University of Idaho two years ago. I am keenly interested in attempts at demonstrating effective college teaching. It was my belief that hindrances to effective college teaching could be more readily overcome in Idaho than in most places. The fact that I felt called upon a few weeks ago to resign from my

position there does not reflect in any sense a doubt as to the practicability of the enterprise from an educational point of view. Other factors, not educational in their origin, made the continuation of the undertaking seem futile. I may say in passing, however, that the two years' experience in Idaho have left me more certainly convinced than before that the principles upon which I undertook to work out a more effective teaching relationship between faculty and students are sound.

All that can be said on the subject of the "Improvement of Instruction at Idaho" after so brief a period of trial must be in the nature of hopes and faiths, because but little can be actually demonstrated in so short a time.

The topic will be discussed under three headings: (1) the better educational placement of students; (2) devices for developing a better student attitude toward study; and (3) improvements in teaching methods used by faculty members. It may seem that the first two of these topics do not fall specifically under the title "Improving Instruction"; but it will probably be admitted that effective methods of teaching are conditioned quite as much by student interest, student ability, and student attitude as by the particular technique used by the teacher. I maintain, therefore, that any program for improving instruction must start with making the conditions in the institution such that student interest is genuine and the work expected of the student consistent with his ability and his aptitude.

THE BETTER EDUCATIONAL PLACEMENT OF STUDENTS

One of the largest difficulties in college education is its poor integration with the high school. Students come from the high school and find that what they have done in high school seems to be largely disregarded, or at best heavily discounted in college. Students who have had a year of a given subject—say chemistry—sit down in college classes side by side with the students who have had no chemistry. Students who have had a year of Greek and Roman history in high school sit down side by side in college history classes devoted to these same historical periods with students who have never had any work in Greek and Roman history. So it goes all the

way through. It was first necessary, therefore, to readjust the curriculum offerings in the University so as better to dovetail with the work in the high school.

A study was made by Mr. T. S. Williamson, a graduate student, revealing the extent of overlapping between high school and the first courses in college at the University of Idaho. This study revealed that of a total of 3,831 student credit hours taken in certain courses in history and the social sciences, 1,461 student credit hours, or 38 per cent, repeated essentially what the students had studied in the high school. Of a total of 4,241 student credit hours in certain courses in the physical and biological sciences, 1,252 student credit hours, or 29 per cent, repeated the work of the high school. It showed that 74 per cent of all the students studied at least one course that essentially repeated the work of the high school, and that an average of 4.08 credit hours per student was spent in courses which essentially repeated what the same students had studied in the high school.

While the details of this study are very interesting, the reason for mentioning it here is that it helped to bring about a realization on the part of both students and faculty that a better adjustment between high school and college was absolutely imperative. Therefore, curriculum adjustments were made so that during the year just closed, 1929–30, Freshman students were enrolled much less often in subjects which repeated high-school subjects. Requirements in the courses were adjusted, therefore, to the abilities of students much more precisely than was done in previous years, when some students were repeating their high-school courses while other students in the same classes were studying the topics for the first time.

Of course, even this new curriculum does not represent perfect adjustment between high school and college. It was one of the devices, however, which helped to bring about in the student a more serious attitude toward college from the day of his entrance. Presumably too, the teachers who taught these beginning courses were better able to select the material for these courses so as to appeal to the interests and to test the capacities of the students. To this end

students were encouraged to reveal to the teachers the difficulties they were experiencing.

A second device for the better educational placement of students was the increase in attention to student personnel data. A Bureau of Student Personnel was organized, and a director put in charge whose principal duties were two: (1) to assemble the information about each student on the basis of which his instructors could adjust their work better to his interests and ability; and (2) to conduct a series of conferences with faculty advisers on the basis of which registration of students, and student counseling throughout the year, could be somewhat more wisely handled. These faculty advisers were expected to have for these interviews a personnel record on which was recorded all the essential data bearing upon the given student's experience before coming to college. Not only were the grades in high school recorded but, wherever possible, data indicating what the high-school faculty members had thought important—psychological test scores, personality and emotional ratings, student's participation in extra-curriculum activities in high school, and any other data which the principal of the high school had been willing to volunteer at the request of the personnel officer. With these data in hand, the faculty adviser guided the registration of the student and encouraged conferences with the student at whatever time and upon whatever subjects the student wished.

I realize that there is nothing unique in this procedure, but it is cited here as a recognition of its importance in improving instruction. The fact that the numbers in the University of Idaho are small and that the faculty can be reached quite readily may indicate the possibility that these data have somewhat more effectiveness there than is true in many larger universities.

THE DEVELOPMENT OF BETTER STUDENT ATTITUDE TOWARD EDUCATIONAL WORK

Probably the greatest bane of university life today is the attitude which prevails among students in general toward educational work. The practice of recent decades, especially in the public schools, but with little less force in college, has been to require or to coax students to go to high school and college. They have been led to feel

that they are doing the high school or the college as an institution a favor to attend. All sorts of devices have been adopted, accordingly, to persuade or cajole them into a modicum of effort, while the students have developed the general attitude that the high school or the college is responsible for their education. Honor points, grades, prizes, and other spurious incentives have been substituted for the genuine values of learning in the minds of students. They have been led to assume that, if they, as students, but do what they are told, at the completion of their school or college attendance they will have become educated. Very little interest has been taken by students themselves in the problems of their own education as such. That is the function of the faculty. They are doing all that can rightfully be expected of them when they follow instructions. They are too generally quite content to circumvent these requirements by any sorts of sham or subterfuge, or even dishonesty.

The most important problem, therefore, confronting any institution which starts out to improve instruction is to change this attitude of students and secure from them a genuine co-operation in their own education. This is a matter of campus public opinion or student morale. To develop such a campus public opinion seemed to me the most important problem at the University of Idaho.

As an illustration of the way this artificial spirit had found expression in University regulations, the rules concerning absences from classes will probably serve best. These were as follows, as found in the University of Idaho bulletin for 1928–29:

> Each unexcused absence entails a loss of one-tenth of one credit from the possible total.
>
> No absence shall be cancelled or excused by an instructor in any case. All omitted work, including required tests or quizzes, shall be made up at the convenience of the instructor.
>
> Absences due to illness shall be excused in the registrar's office upon the filing therein by the student of a statement signed by a physician, the resident nurse, parent, or chairman of the committee on health and housing, certifying that the student was necessarily absent on account of illness.

This regulation is not unlike in spirit the regulations prevailing on many, if not most, college campuses today. Students should attend classes, and therefore college faculties pass regulations designed to punish them if they do not. One of the obvious ways of punishment

is to deduct from their credits. If, by any chance, a given student has credits to spare, then of course he can pay for absence from classes by the loss of these credits, and the account is squared. Therefore a registration for 18 semester credits when only 16 are needed for graduation purchases the right to 20 unexcused absences from classes during that term. Furthermore, making the student health nurse believe one is sick is quite as effective as being actually sick when it comes to saving that one-tenth of a credit for absence. All of this tends to develop in students the attitude that attendance at classes is a concern of the university and not a concern of the student.

All such regulations are a public recognition that students are not expected to value the opportunity of college attendance for itself. It is my belief that they can be led to value it, and that, until they do, their college attendance is of doubtful social significance.

The faculty of the University of Idaho proved quite willing to relax regulations such as this. In the middle of the school year 1928–29, the foregoing regulation was rescinded and the matter of attendance left with each school to handle as it saw fit, but with the understanding that, in general, students would be expected to attend classes because there was value for them in such attendance. Where such attitude seemed to be lacking, it should be regarded as a reflection upon either the student or the teacher, or upon both. Any student who exhibited the attitude of doing only what was required by regulations should be subject to investigation as to whether the state should be expending its resources upon him. If a considerable number of students seemed to consider it not worth while to attend the classes of an instructor, an investigation should be undertaken to determine whether his subject matter and his teaching procedures are suited to his classes.

Other devices were used to bring about a changed point of view among both students and faculty. A series of talks to the Freshman students by representatives of the faculty and by the president of the University were designed to help bring certain points forcibly into their consciousness. For example, in my own talks to them the point of view which I expressed may be best exemplified by one remark. I said, "I hope that you will not find any members of the fac-

ulty who will care too much if you fail. I have found that where the faculty cares too much you don't care enough. I prefer to have you care rather than the faculty to care. If you are not ready now to engage seriously in your own education under your own steam, then you're not ready for the type of education which the University of Idaho hopes to make available to you."

This spirit spread widely among members of the faculty. Not all of them, of course, were entirely committed to it, but in general they sought to bring that spirit to prevail in the student public opinion. Student response was very general, and wholesome.

Among the most significant agencies used to bring about a changed student morale was the organization of the faculty advisers elected by the student fraternities, sororities, and other groups. Each student group living in a separate house chooses, with the approval of the president of the University, a faculty adviser. These faculty advisers had been rather inactive and had interested themselves in student group life generally only when some untoward occurrence happened in one of the houses. These faculty advisers were stimulated to organize themselves under a chairman and to consider what could be achieved by taking an active interest in the welfare of their respective groups. They recognized their strategic position in building up a strong student morale. Some were more effective than others, of course, but on the whole a great deal of good came about by the activities of these group advisers.

Finally, one other contact between administration and students was instituted. Each student group—fraternity, sorority, dormitory, and the like—has its own organization and elects its own student president. In order that I might have some channel through which to bring my own point of view to the attention of students and have them discuss with some understanding the problems involved in the assumption by students of a fuller measure of responsibility, I organized a Group Presidents' Council in which it was possible to discuss some of the most significant educational problems confronting the University. I found in these student leaders a body of sympathetic co-workers for the changes which tended to place greater responsibility upon the students. I found that they were willing to go much farther and much faster than it seemed to me or to the fac-

ulty wise to go, but there was the most cordial relationship between the administration and this Group Presidents' Council. Misunderstanding on the part of students in general of any purpose or policy which the administration or the faculty wished to advocate was forestalled if this group of student leaders could be given a comprehension of it. These leaders were in daily contact with their groups and were in a position to guide student discussion concerning matters of educational significance which the administration was undertaking to bring about in the University. Incidentally, they were wise counselors in many matters of educational policy.

Of course, throughout these two years, as in previous years, there has been an organization of the students called the Associated Students of the University of Idaho. Their function has been to control those matters of student life which fall outside of the curriculum interests. This organization was enlisted, as far as possible, as a group to spread proper understanding; and they expanded their sphere of influence somewhat to include certain elements of student government which had previously not been regarded as their function.

I speak of all of these things, although no doubt they appear relatively insignificant, in order to make clear that every effort was used to spread through the student group the idea that education was the job of each student and not the job of the University for the students. Nobody can educate a student but himself, and the sooner he assumes responsibility to direct his education the sooner and the more surely will he develop those qualities which are basic in any true evaluation of educational outcomes.

IMPROVEMENTS IN TEACHING METHODS USED BY FACULTY MEMBERS

Along with assuring progress in placing students where their interests, aptitudes, and abilities dictated, and in developing an attitude of independent study on the part of students, it was necessary to carry forward simultaneously that part of the program having to do with improving teaching methods. Probably no other educational task is as difficult as that of securing a sympathetic attitude on the part of the faculty toward a change in methods of college teaching. Teachers in high school, and even more universally in college, take it for granted that education consists of the learning of

the facts within a given group of subject-matter fields. It is hard for them to take much interest in how those facts are learned or in other, even more significant, educational outcomes.

Methods of teaching follow naturally from one's philosophy of education, and therefore the first necessity was to introduce the faculty to a somewhat different philosophy of education than that to which most of them were accustomed. Accordingly, at the opening of my term of service at the University a series of faculty meetings were held in which I led in the discussion of the important principles underlying modern education. I am well aware that in a larger faculty or in a faculty where the graduate idea is more dominant such a series of discussions would be less appropriate than in the relatively small faculty at the University of Idaho. Even at Idaho, it must be acknowledged that the procedure struck many as strange and some as not altogether welcome.

At any rate, there was a courteous hearing given to what seemed to me a necessary minimum discussion of principles underlying my own proposals relative to administration and teaching methods. It was definitely indicated, however, at the outset that the decisions with reference to any of these proposals would be decisions reached by the faculty without any coercion by the president. After the series of discussions ended, the faculty, by the use of its own committees, went independently into the matter of readjustments of curriculums, the modification of regulations, and changes in teaching procedures. As a result of this faculty deliberation, the readjustments described in the foregoing pages were adopted and became effective in 1929–30.

As a means of bringing to the attention of individual faculty members the attitudes held by alumni with respect to their teaching methods, a questionnaire was sent to all the graduates of the University in the classes of 1924 to 1928, inclusive, asking them for their co-operation in helping to improve methods of college teaching. It seems proper to quote here the essentials of that questionnaire. It reads as follows:

To the Idaho graduates of the last five years
Greetings:

Are you willing to render your Alma Mater a distinct educational service? A few minutes of your time will do it.

No university can be greater than its faculty. A great faculty can be maintained only by discriminating among the members, recognizing the strong, and withholding recognition from others. We believe that the judgments of graduates will aid greatly in the task of discrimination. Will you kindly answer the questions on the reverse side of this sheet and return the same to me in the enclosed stamped envelope?

Your co-operation will be greatly appreciated.

Yours for a greater Idaho,

F. J. KELLY, *President*

A. Name in the order of excellence the three best university faculty members under whom you studied in the University of Idaho, and underscore the qualities in which they seemed to you particularly strong.

1. Name_____, Dept._____, scholarship, interest in students, co-operation with students, careful daily preparation, enthusiasm, called forth student initiative. Name other qualities: _____.[1]

Comments on above:_____

B. If in your opinion any members of the faculty seemed distinctively to lack certain qualities essential to satisfactory members of the faculty, name those faculty members and underscore the qualities in which they seemed to you seriously deficient.

1. Name_____, Dept._____, scholarship, interest in students, co-operation with students, careful daily preparation, enthusiasm, called forth student initiative. Name other qualities: _____.[2]

Comments on above:_____

In what year did you graduate?_____From what school or college? _____What was your major subject?_____Your name (omit if you prefer)

_____

A tabulation of these results and a summary of any comments as they affected him were sent to each teacher. In some cases I held conferences with these teachers. In other cases the Deans held conferences with them. They were made conscious of the respects in which the alumni thought their teaching was strong and in what respects, if any, weak. Some teachers, of course, resented the entire activity, but the great majority felt that the information thus compiled was helpful to them. It had the effect particularly of concen-

[1] Similarly, there were spaces for second and third choices.

[2] Similarly there was a space for second choice.

trating the attention of the members of the faculty upon the procedures they were using in teaching and on the response of students to these procedures. Whether or not they agreed with the criticisms which the students registered, at any rate they gave more attention to the subject of teaching than they had formerly done.

It was my purpose to have a considerable number of speakers come before the faculty and to have committee reports on problems of teaching made the basis of faculty discussions as time went on. However, relatively little has been possible during these two years because the faculty has been too busily engaged in the readjustments which it found proper to make in the larger phases of university organization and curriculums. Some little was done, however, in both the general University faculty and in the separate school faculties, and this helped to concentrate attention upon the importance of the problem of better instruction.

It is, of course, needless to remind this audience that two years are altogether too short to accomplish much in the way of change in teaching methods. We are only in the beginning of the program at Idaho. Many things are being done in other colleges and universities more significant than anything done at Idaho. Experimental studies such as are being undertaken in several American colleges and universities are most needed, and we have not got around to anything worth while in that line during these two years at Idaho. I am not proud of the record, but I was willing to respond to the invitation to tell this group how I went about to meet a practical situation as I found it. Had I known, when the request to make this address came, that I should have severed my connection with the University before the date at which the address was to be given, I should have declined to tell of the work at Idaho. But under the circumstances, I was willing to cite these bits of the program which have been put into effect, fully realizing that only as one has faith in the fundamental philosophy underlying the program do these items which I have cited have any significance.

What I have said may seem to some of you to imply that the University of Idaho was in great need of reform in matters of teaching methods. Let me hasten to assure you that I think Idaho, before I went there, was quite above the average in the interest in teach-

ing manifested by the faculty. The excuse for my undertaking the program of improvement as vigorously as I did was that I went to Idaho with certain rather definite objects in view, and was assured a cordial support by the faculty in working them out. Surely no reflection upon those who preceded me at Idaho can follow from the foregoing statement.

RESULTS

There remains only a brief discussion of results. Naturally, one can scarcely hope to get any significant measure of results in so short a time. In the first place, any measure of the status existing under the earlier régime is not available. Neither has it seemed desirable to undertake any extensive program of measurement during these two years. Too much was involved in the maintenance of student and faculty morale to risk much in the way of comprehensive and critical examinations. Therefore, about all that can be said comes from observations of student life and student response by faculty members and myself.

However, two bits of evidence of a quantitative sort seem to me significant. First is the number of calls which students make at the student health service clinic. The average number of calls in 1927–28 was 45.4 per day. During the school year 1929–30 the average number of calls was 15.5 per day. Even granting that something has been done to improve health conditions, it must be admitted that the largest factor in bringing about this decrease is the change in the regulation dealing with absences. The school health nurse and the physicians in the health service were constantly giving excuses for absence to students who had not been ill but who represented themselves as having been ill and needing an excuse to avoid a loss of one-tenth of a credit. Such a practice not only must have a deleterious effect upon the moral fiber of these youth but it tends to spread upon the campus an attitude toward getting-by, which makes impossible a distinctly high morale with reference to student responsibility. In this connection it should be said that while no figures are available by which the absences from classes during the past year can be compared with the absences of three years ago, the general comment of the faculty is to the effect that attendance is certainly not less regular than it was earlier.

The second bit of evidence has to do with the greater persistence in the University of students during the past academic year than formerly. The number dropped during the first semester of 1929–30 was only 55 per cent as great as the number dropped the first semester of the year before, and only 57 per cent as great as the average number dropped during the first semesters of the four previous years, even though the total number enrolled at the end of the first semester was greater this year than in any of the past four years. Similarly, the decrease in enrolment from first semester to second semester was much less this year than in any year during the past four. Of course, these results might be brought about by many causes. For example, the standards required may have been lowered or economic conditions may have improved. None of these things, however, appear, to those best acquainted with the University, to be the case. Academic standards in the University have, in the general opinion of the faculty, been raised; and there is no reason to think that economic conditions have altered markedly during the past year.

The more obvious explanation is that student morale has actually improved. The discipline committee reports much less of violation of accepted standards of conduct. The more responsible students themselves report a very obvious change in student attitude toward study. There have been fewer exhibitions of student pranks which should be outgrown before students reach college years. For example, there has been no painting of class numerals about the town in the past two years. In short, an attempt to take an impartial and objective view of the situation has convinced me that college students will respond genuinely to these attempts at improving instruction and that they can be depended upon to develop a high degree of independence and responsibility if those traits are thought by the university to be important and if the university goes about deliberately to develop them.

CHAPTER XVI

THE SELECTION AND DEVELOPMENT OF COLLEGE TEACHERS AT THE UNIVERSITY OF IOWA

PAUL C. PACKER

Recent studies indicate that 60 to 90 per cent of the graduate students in various university departments who go forward to the Doctor's degree find their life's work in some form of educational work. They are generally identified with the secondary field, the normal school, the college, or the university. Their specific work varies from full-time teaching to full-time supervision, administration, or research. Relatively few, however, escape teaching at the beginning of their careers. Many must teach at both the undergraduate and graduate levels. Furthermore, they frequently must do research work, especially in university positions. Such an array of demands in developing teaching personnel presents problems of the most complicated sort and for which no institution has an adequate answer.

This problem is further complicated by the fact that little agreement is to be had as to what should be taught in any field. Even the most limited minimums are almost universally lacking. This, coupled with the wide variation of requirements within each teaching position, challenges the best minds in every institution. Any comments made in this paper should be considered only as descriptive of a plan and be thought of, in no sense, as a scientific way of either selecting or developing college teaching personnel. In addition, these comments have to do only with the description of an attempt to secure just a few first-class men, and not in any way to propose a plan for the selection of the total prospective teaching group. It is hoped that out of this experimental attempt which will be described may ultimately develop some earmarks that will help in discovering potential college teaching personnel earlier than we do at present.

Let us consider the problem of selection first in this double-barreled topic of selection and development of college teaching per-

sonnel. Until very recently, the various departments in the University of Iowa were more or less content, as far as the problem of developing teachers on the college level was concerned, to take the graduate students who came to them, and do the best they could with them. In common with most institutions, they passed those who seemed best and failed the others. Of those who finished, some succeeded and others failed to meet the demands of their positions. This situation became more and more acute with the ever-increasing number of graduate students. Out of this condition grew a well-defined desire to see if it were at all possible to save the failing students a colossal waste of time, money, and disappointment. There also developed a consciousness that the whole problem of teaching must be examined. It might even be said that, for the first time in the history of the institution, the faculties, other than education, recognized that teacher-training is one of the major functions of the university. Those within a university will appreciate that the acceptance of this task as a major responsibility by the general graduate faculty is a long and significant step forward.

An examination of the graduate personnel revealed scholastic ability ranging from poor to splendid; personalities measuring from almost certain failure to assured success; ages extending from about nineteen to unknown; previous experience successes from a position of never having tasted it to those who had always enjoyed it; and purposes and interests ranging from those who hoped a period in graduate study would save their professional lives, though nothing else ever had, to those who were having an excellent time working toward a definite objective.

Such facts obviously raised two general questions, one of them being: Could any better way be devised to select prospective graduate students than heretofore? The other was: Could those unqualified who were already in the graduate college be advised in any more humane way than by failure in the doctorate examination? In the long run a positive answer to the first question is the most important, of course. The second question, however, is with us, and probably always will be, although it should decrease in the degree that the problem of selection is solved.

Naturally, because of its immediacy, attention was first given to

those already in the graduate college. The examination at this point was limited to the graduate students in education, who, on the University of Iowa campus, represent the largest single group. This will be extended to other groups next year.

In making this examination, no attempt was made to draw fine lines of distinction. Those who were classed as individuals who should be advised not to continue with the expectation of receiving the doctorate were clearly not marginal cases. As nearly as they could be classified, they fell into four groups, which were: those whose scholastic record, measured by all their marks, was either failing or just passing; those whose scholastic record was passing, but whose ability to develop a Master's thesis seemed almost, if not entirely, absent; those whose scholastic and thesis ability was satisfactory but whose personality characteristics were so marked that failure in teaching seemed absolutely certain; and those whose previous preparation or interest was definitely along other lines. It was apparent that no general rule could be applied to handling these different types of cases. Even among the failures, an occasional student was found who succeeded when transferred to another department.

In the case of those who had satisfactory records, the most common solution was to allow them to carry work which would contribute to the better handling of a type of position which did not require the doctorate degree. Those who suffered serious personality handicaps were advised and helped to seek some other line of activity. For the last class, where preparation and interest did not fit the job undertaken, outlets were found for study in other departments. There are probably better groupings and much finer classifications to be made than these. Other measures will be applied this coming year, not only to those who apparently fall clearly below the line, but to all in order that we may shape their training better than at present.

The net result of all this maneuvering has been to reduce greatly the time and money loss on the part of the students. Many have learned earlier than heretofore that continuing was extremely hazardous. Others have learned to transfer more promptly to other departments. While this delay period of selection, or late adjustment,

has proven extremely valuable from the point of view both of the student and of the institution, it is clearly recognized as an adequate and only partial cure. Going through these growing-pains has led, though, to the setting-up of a very limited program of selection. This program is not new in many particulars but is important in that it is systematic and operates for a very limited group before the college work is commenced or before the B.A. degree is conferred. It also operates among those who, having completed undergraduate and possibly some graduate work, have already shown marked degrees of success in teaching, supervision, or administration.

There are just three large sources from which this prospective teaching personnel may be drawn: the secondary schools, the undergraduate schools, and the field of experience. At the present time none of these sources are continuously and thoroughly worked except possibly the field of experience. From the teacher-selection point of view, the secondary schools are apparently untouched, and the undergraduate schools but slightly.

In setting up our experimental methods at the University of Iowa for selecting teaching personnel from these sources, we have been thoroughly conscious of the general opinion that students do not know until very late in their educational work what they expect to do. Furthermore, we are fully aware that part of the machinery we want to introduce has never been used and that it will take a long period of time to make it work either smoothly or effectively. Not only this, but the factors to be used in selection at first are so crude that no doubt they will be rapidly replaced in the light of experience. Please bear in mind all the time that in this program we are after only an occasional student and are not attempting any general vocational determination.

Briefly, the methods of selection of college teaching personnel from the three levels, high-school Seniors, college students, and the field of experience, are as follows: In connection with the high-school-Senior source of supply, a few high-school principals and superintendents, intimately known to us, have been asked to act as selecting agents. These men whom we have asked to work upon this problem are usually consulted by every student who expects to go to college. If during these interviews a first-class boy indicates—

and, strange as it may seem, it has happened—that he is interested in teaching, he will be advised to come to the College of Education for further and detailed information as to a career in teaching.

There will come with him, of course, his scholarship record. In addition, the principal and superintendents will be asked to rate him on personality, stick-to-it-iveness, and character scales. The unreliability of all three of these measures is fully recognized. It is hoped, however, that since the principals and superintendents are intimately known to us and have been specially selected for this purpose, we can rely far more upon their judgment than any mechanical scheme of rating. To aid them in doing this, they will use a five-point scale on each of the three qualities and actually put specific individuals in each one of the five places on each scale. They will then report the rank of this boy who thinks he would be interested in teaching on each of the scales. The steps on this scale are merely to be "very poor," "poor," "fair," "good," and "excellent."

In the matter of stick-to-it-iveness, there is a chance to use some objectivity. What it means for our purposes is simply this: Does he finish the tasks he commences about the school, either in class or out? All of these records will be reviewed upon his arrival. In addition, an aptitude, health, and placement test will be applied. If he ranks high in all of these qualities and measures, and still evidences interest in proceeding toward teaching, he will be advised in relationship to his special interest in the field. All ratings of the principal or superintendent will be kept confidential.

It should be borne in mind that no attempt will be made in the beginning to do other than secure an occasional thoroughbred. We would regard this method as highly successful if, at the end of five years, it produced yearly twenty-five potentially great people from the entire state. If at the end of ten years, it should produce a continuous stream of fifty great, intellectually able, and generally competent personalities going straight through to the doctorate degree, we should regard it as the most significant contribution to teaching personnel ever effected. The success of such a scheme would cause high-school students to look forward to an educational career with the same zeal and purpose as they now look forward to medicine, law, and engineering.

The same basis of selection is set up for the undergraduates as for the high-school Seniors. For the present a few heads of departments of education have been asked to co-operate, and this will be extended to other departmental heads who are genuinely interested. Here again, no attempt is made at present other than to secure a few students of marked ability.

In encouraging those in the field to continue study, the program of selection shifts slightly. Individual members of the University staff and former students will furnish the main group from which selections can be made, by constantly looking for able people in the field. One of the last charges given certain graduates in education, receiving their doctorate degrees, is that each should find at least one high-class man every five years and send him on the road to graduate work. Such measures as known success in the management and development of present position held; past record of undergraduate or graduate scholarship—this to be not necessarily dead-level high record but at least fair at all points, and markedly good in some respects; and competent personality and interest, will be used. Here it is obviously easier to succeed in the selection of competent personnel because several of the potential qualities found in the case of high-school Seniors have been measured and are no longer in question.

In September, 1930, it now seems certain that about ten young men of apparent first-class quality will be definitely preparing for teaching. As a matter of fact, three are listed at the present moment as a direct result of this first year's very limited undertaking. From the field of experience a much larger number of high-caliber students will be present in the graduate school this fall specifically because of this program. The plan of field selection has been operating over a long period of time and now assures a fine group of men. In these methods of selection two very important measures are missing. Only rarely is definite evidence found respecting ability to do research or to teach among those selected directly from the high-school Seniors or the undergraduate students. As we are dealing with those who are not only in the upper 10 or 15 per cent in scholarship but who are also in the upper group of the distribution in personality, persistence, and character qualities, we are perfectly

willing, for the present, to experiment on their learning to achieve in these two respects.

The second barrel of this gun has for its target a brief description of the development of teaching personnel once it is selected. As in the matter of selection, we find ourselves confronted with lack of verified objectives and measures which will determine accurately just what sort of training will achieve those objectives once they are known. It is possible, however, to outline in general and descriptive terms just the manner in which the University of Iowa is proceeding experimentally along this line until such time as the objectives of teacher-training and its purposes are more clearly understood and defined.

In the first place, we are laying down the fundamental principle that a prospective college teacher's training shall not only include a significant grasp of the field to be taught but also the place and relationship it holds to other fields of knowledge. Also, we are including in the principle the fact that the way in which the job of teaching is to be done at the different levels of advancement is important. An assumed corollary of this principle is that the very best teacher must be able to do research work in his field. Without this latter assumption it is believed that adaptation to new information and changing conditions will sadly lag.

It is then, on this principle, that our teacher-training program is based. We believe that selection of thoroughbred personnel developed on this premise will advance the program of teaching significantly.

Upon the arrival of the selected Freshmen, the College of Education will map out course work for these students in the liberal arts college. The detailed advice of the various departments will be sought in each and every case. Care will be taken to see that the fact that these students are proceeding to a future career in college teaching is specifically known to each professor teaching them. No student will be expected to major in professional education. Such work will be limited to a service unit of fifteen hours.

The general plan is that, no matter whether the student expects to become a teacher of chemistry, history, music, or education, etc., he will have units in science, social studies, languages, and fine arts,

with especial emphasis on his chosen field. In short, his scholastic training will be of the pyramid rather than the column type. Fortunately, our general requirements for the B.A. degree permit the establishment of this method of procedure without change in the general regulations of the faculty.

The main objections to this scheme are that it cannot be done and that, even if it could, time is not available. The answer to the first is that it is being done to some extent by some institutions, as evidenced in the so-called "orientation courses." More fundamentally, however, it is going to be answered by the studies in duplication and overlapping between secondary schools and the first two years in college, with the almost inevitable result of releasing time now largely wasted. In the meantime, much should be accomplished in making available, for college teachers, some of the tools of thought in fields other than their own specialties, thereby giving a perspective so often absent at present.

This undergraduate period of the student will be followed immediately with three years of graduate work. Here again, the plan will be to have the prospective college teacher utilize, more systematically than at present, any part of the University work that contributes to his complete training. Each department wherein a student is looking forward to teaching will maintain a seminar on the organization, objectives, and limitations of the instructional materials in its respective field. Following this, the College of Education will give a professional seminar in teaching for all such people. Such a seminar is to be established at the University of Iowa in September at the request of the graduate college.

Either following or during the three-year period of graduate study will come a teaching interneship. If time permits, such interneship will be included within the three years. If it is not possible, a one-year interneship will be added. In all probability, the additional year will soon become the practice, since the demand for more extensive, as well as intensive, scholarship in a student's field of study will be made during the next thirty years than in the past thirty. Another important reason why more adequate time for interneship must be provided than has been in the past is that institu-

tions employing teachers will not want much longer to take on their staffs partially trained teachers.

Students discovered in college who are to be directed into teaching will be handled in a very similar manner, the major exception being that late discovery of them may require more time on their part to fill in gaps in their training.

Students coming in from the teaching field to do graduate work should be able to eliminate in a large part, if not entirely, the interneship period. It is hoped that it will be possible to include such interneships within the three graduate years. No estimate has been made of the amount of time likely to be involved if a student shifts his major field of interest. The variation is so great that no general statement is possible. It should be emphasized that, in general, the later in life one determines to enter college teaching the greater the price he will pay to compete successfully.

Since our plans for the selection and development of college teaching personnel over the wide range suggested here are so recent, it is necessary to illustrate just how these plans work by taking a case that has been drawn from the field of experience rather than from the high-school Seniors or undergraduate students. The following illustration is typical of the manner in which several field men have been handled.

The man I speak of, when we discovered him, was finishing his sixth year as supervisor of social studies in both the elementary and secondary divisions of a public school. His undergraduate major in college had been history, but he had also had the basic work in economics, government, and sociology. Furthermore, his intellectual interests were such that he had participated more definitely in other fields of study than is the common practice. During his experience period in the field he continued his graduate study and had completed all of his work for the Master's degree except one summer session. It so happened that he was taking his Master's degree in a sister-institution in education. This man had wished to take a major in history and a minor in education, but the history department did not seem agreeable. We, of course, advised him to finish his degree in education, which he did. After completing this work he came to us and started his work with a major in history and a

minor in education, looking definitely forward to the specific job of developing teacher-training work in the social studies and of assuming the responsibility of producing competent men to head teacher-training divisions in this field. His work in education had been of such fine character that he has not been asked to continue any work along that line here. While going forward with his graduate work, he has been serving an interneship in teaching in content as well as in special methods. In addition to his thesis, which is strictly academic, he has been carrying forward some professional research with a member of the educational staff.

At every single point of contact he has been markedly successful. Beginning this September, he takes charge of the social-studies division in our experimental secondary school and the special methods of teaching in this field. His academic rank will be in the liberal arts college, and he will be welcomed by the history faculty as a full-fledged member. It is not too much to say that he has fulfilled every requirement in the program we have set up, except that he did not come definitely into the picture until he had nearly completed his Master's-degree work. The period of training in his case will have extended over two calendar years beyond the Master's degree when he is awarded his Doctor's degree in August.

It would have been possible to illustrate this program many times in purely professional education. For this reason an academic department was chosen, for, as we know, such combinations of a college teacher-training unit is not common. Our general university faculty is becoming rapidly alert to this problem; and with the type of talent the College of Education is bringing in to them, their interest is being significantly stimulated. This may be made especially clear by citing one illustration: In one academic department alone the two star candidates for the Ph.D. degree this year were brought upon the campus by the College of Education. Both men are definitely going into the professional side of teacher-training and not the academic. They are, however, majoring in the field of the content they expect to teach. This does not represent any great generosity on the part of the College of Education. It is because the College of Education at this institution believes that one of the large responsibilities of the liberal arts college is teacher-training. If this

is true, then the job of teacher-training is a co-operative one and not merely a side issue to be totally assumed by the College of Education.

In this brief discussion there is not time to describe in detail the field-interneship program that the College of Education has been carrying on for more than fifteen years. This program has touched mainly those students who have been majoring in education in the fields of administration and supervision. It has been developed until certain centers are glad to take these men for a period of two or three years. So far the institution has been lucky enough not to have any failures. All but two of the cases that have been sent out have returned to the field of college teaching. These two now hold significant superintendencies.

On the campus we are operating interneships in the fields of personnel, university business managership, and instructional research. This work is all in addition to the regular graduate work provided. The only measures we have had of the contribution of this sort of work have been the complimentary comments of the employers and the responsibilities and rapid promotions the men have received. We believe that with the systematic establishment of teaching interneships on the college level to all departments similar gains will be made in teaching. Not enough evidence is yet available to indicate just what the contributions of this sort of work are.

The demands set up in the foregoing program for the development of college teachers varies fundamentally from the point of view commonly held among academic departments except on one point. It agrees, without reservation, with the idea that a student must have a very fundamental grasp of the subject he is to teach. Here the agreement ends, for the point of view presented demands, in addition, that the student know the place and relationship his subject holds to other fields of knowledge and that he also know how to organize and effectively present his subject. The first difference means at least a partial change or addition in course content. The second means the definite addition of significant professional training not now common. In short, this program definitely opposes the idea that knowledge of a subject alone is enough for first-class

teaching. On the other hand, this program of the development of college teachers not only admits but insists that the job cannot be done by the College of Education alone, but only in co-operation with every department on the campus.

In conclusion, we want to emphasize again that the program of the selection and development of college teaching personnel at Iowa is distinctly in the experimental stage. As was indicated in the beginning, no new and remarkable technique has been proposed in this paper. Rather, it has been the purpose to describe in its main general features how we propose and how we are in some instances selecting and developing a very limited and high-class student personnel for college teaching.

CHAPTER XVII

THE IMPROVEMENT OF COLLEGE INSTRUCTION THROUGH EDUCATIONAL RESEARCH

MELVIN E. HAGGERTY

When a present-day student of education speaks of the improvement of college instruction, he may imply any one of a number of things. Reference may be to a more satisfactory selection of curriculum content, to a clarification of teaching objectives, to a more accurate method of measuring student achievement, to the elimination of wasted time, to the incitement of greater interest and activity on the part of students, to a better grouping of students for instructional purposes, to a more effective organization of teaching materials, to better classroom techniques. Never does he mean that invocation of magic which academic teachers so frequently ascribe to their colleagues who essay to offer "methods courses." He knows better than do his critics the insidious beguilements of educational theorizing, and he would fly from superficiality and superstition as quickly as would the hardiest physicist.

So true is this that many men in education have all their lives avoided coming to terms with the problem of classroom techniques. They have studied psychology, or educational finance, or administration, or school organization, or comparative education, or the curriculum, feeling all the while that the heart of the educational problem lies somewhere in the teacher-student relationship, but knowing also the baffling intrinsic difficulty of this central issue. Their manner of approach has been through an attack upon the marginal problems of instruction more amenable to analysis and experiment, and in this indirect way they have found plenty to occupy their attention. Here have been developed the techniques of educational investigation. About these problems has developed such educational literature as we have.

Despite this chariness of educationists to attack directly the problems of instruction, we are all well aware that when we speak

of the "improvement of instruction," the phrase must always denote an influence of the instructor upon the learning of the students. Because of something he does, they acquire more information, learn at a faster rate, remember better what they learn, organize their facts and skills for more effective use, are stimulated to more active search for knowledge, and extend their range of interests. The criterion of effective instruction is always to be stated in terms of alterations in student conduct. The evidence of improved instruction is ever to be found in the increase or acceleration of desirable changes in student behavior and accomplishment. Let us hold this basic principle in mind while we consider its implications.

It follows from this view that if instruction is to be improved, the instructor must change his own activities so that his students are more helpfully stimulated and directed—influenced, as we say. He ceases to do useless things; he does other things more helpful. This changing of his own conduct on the part of the instructor constitutes for him a process of learning. He, too, is a learner, not primarily of the subject matter which he essays to teach, although he will be that too, but of human behavior as it appears in those who make up his class. Over and beyond the materials which he sets for their learning, he must increasingly understand the ways in which this material is received by them and wrought into the stream of their mental lives.

This is not said to state something new. Rather, it is intended to revive in our thinking a very old and commonly accepted proposition. It is the sole value of experience which we so generously laud as the perfecter of teaching skill when through experience a teacher learns to desist from useless activities on his own part and does other things more conducive to student learning—does them with less waste, more frequently, and more persistently.

The present import of this well-known fact is that it identifies the point of incidence toward which all our efforts to improve college instruction must converge. Unless college teachers can and will change their conduct of teaching, no improvement of college instruction can occur. All that college administration can do in this matter is to create about the individual teacher such influencing conditions as will suggest and facilitate desirable changes in his ac-

tivities. It can do little, if anything, directly to improve instruction. Only the teacher of mathematics himself can improve the teaching of mathematics. His is the key position; his is the final responsibility for good or poor teaching. If anyone can bring to an instructor new knowledge about teaching, stimulate his interest in teaching problems, or provide him with methods by which he may study his own techniques and the results of his instructional efforts, such a person may assist an instructor to self-improvement. But it should never be forgotten that genuine improvement is a process of internal adjustment and growth on the part of the instructor. Good teaching, like other forms of art, is an expression of personality and will not be accomplished through the imitative adoption of devices proffered by external authorities. The crucial question to be asked, therefore, by anyone who seeks the improvement of college instruction is this: Through what means can college teachers be made more sensitive to the subtle and delicate psychological processes involved in human learning; how given a better sense of the differential values of curriculum content; how stimulated to a greater interest in student welfare; and how informed as to the varying effectiveness of their own instructional activities? Such a question strikes deep into the structure of the teacher's own personality, and it is in this fundamental realm that we must seek for genuine improvement rather than in the surface accretions of teaching-tricks.

It may be at once admitted that neither educational philosophy nor educational science has any guaranteed prescription to accomplish the purpose thus described, notwithstanding the ambitions of some educationists or the fears of the academicians. There are doubtless many and diverse routes to such a happy end, and in the long history of college teaching they have all been traversed by one or another finally competent individual. Though we have in mind to propose a definite program of attack upon the problem of instructional improvement, it is done in the clear realization that it may cherish no claim to exclusiveness even though it aspires to a kind of superiority.

It is the thesis of this discussion that co-operative research on the part of a college faculty into the problems of college education may eventuate in decided improvement in college instruction. In sup-

port of this proposition, I have been asked to detail certain experiences which we have had at the University of Minnesota in recent years. For almost a decade the writer has been chairman of an all-University group appointed by the president of the University and called the Committee on Educational Research.

Its membership of a dozen persons has been largely drawn from the deans of the several colleges and a small group of interested professors, all of whom accept their places on the Committee voluntarily. The personnel of the Committee has changed only by resignation from the University. The Committee's status is extra-legal, as it were, holding no allegiance to any college administration or to any faculty. In the years of its existence the Committee has carefully abstained from the assumption of any administrative obligations. Its function has been to study the problems of the university and to publish its findings. Such changes as these results have implied have been left to other agencies for execution.

It would not be true to say that in the beginning any of us anticipated all of the helpful relationships which have grown out of the work of the Committee. Our initial efforts were timid and sporadic. As projects developed out of the discussions of the Committee, it was possible to enlist the aid of individual instructors in the work of subcommittees. As these committees have been formed, they have usually contained one or two men from education and psychology and from three to ten instructors from other departments of the University, the majority always lying with the non-education faculties. The individuals have been drawn from the professional groups as well as from the liberal arts college. The names of co-operating departments will give a vivid picture of how widely interest has been distributed. They are as follows:

Administration
Agriculture
Anatomy
Biochemistry
Botany
Business
Chemical Engineering
Chemistry
Civil Engineering
Dentistry
Economics
Educational Administration
Educational Psychology
Elementary Education
Engineering
English
History
Home Economics

Journalism
Law
Library
Marketing
Mathematics
Mechanics
Municipal and Sanitary Engineering
Nervous and Mental Diseases
Nutrition
Obstetrics and Gynecology
Pathology
Pediatrics
Physical Education
Physics
Physiology
Physiological Chemistry
Plant Pathology
Political Science
Psychology
Romance Languages
Secondary Education
Sociology
Speech
Surgery
University Health Service
Zoölogy

The list of projects will give an idea of the area over which our activities have ranged. They are:

1. Student Personnel
   (More than a score of separate studies)
2. The Efficiency of Instruction in Classes of Different Sizes
3. An Analysis of the Marking Systems in Vogue at the University of Minnesota
4. The Educational Value of Extra-Curricular Activities of University Students
5. Alumni Contacts
6. The Mental Hygiene of College Students
7. Dissemination of Research Information
8. Vocational Guidance for Women
9. Training for Outdoor Leadership
10. The College Teaching of Science
    a) Laboratory Instruction in Human Anatomy
    b) The Value of Laboratory Instruction in Human Physiology
    c) The Value of Laboratory Instruction in College Physics—Mechanics
    d) The Effect of Class Size in College Physics—Heat
    e) Some Determinants of Achievement in College Physics—Magnetism and Electricity
    f) A Study of Prognosis in College Physics
    g) A Study of Prognosis in Human Anatomy
    h) Laboratory Instruction in College Chemistry
    i) The Value of Prerequisite Courses in College Botany
11. The College Teaching of the Social Sciences
12. The Reading Problems of College Students
13. Comparative Scholastic Standing of Athletes
14. Prerequisite Courses

15. Student Self-Appraisal
16. Co-operation in the Land-Grant College Survey
17. The Characteristics of Superior College Teachers
18. Instruction in Clinical Medicine
19. Freshmen Failures in Mathematics
20. Problems of Student Employment

The spirit of the Committee's work has been one of inquiry. Here is an important problem needing investigation: the best possible scientific techniques should be used in its solution; new methods must be invented if necessary; and the study carried through to a point that makes it worthy of publication as a valuable contribution to our knowledge of college education.

It is clear that only a portion of the projects listed here have any obvious contingency upon the problems of college teaching. There is ample material, however, to exemplify the thesis which has been advanced. I shall choose for such illustration from completed and published studies. It will be convenient to present the data in reference to certain subsidiary queries anent the improvement of college teaching.

Is it useful to a college teacher to have a clear perception of the degree to which his students acquire the material he essays to teach them? If it is, then our studies have made a substantial contribution to the improvement of instruction in the University. First reference may be made to studies on the effectiveness of instruction in classes of different sizes carried through largely under the direction of Professor Earl Hudelson. This comprehensive investigation, now in book form, has already received such wide publicity as to obviate detailed discussion here.

It involved 59 fully or semi-controlled experiments involving 108 classes under 21 instructors in 11 departments in 4 colleges of the University of Minnesota. The experiment involved 5,879 students—4,025 in large classes and 1,854 in small. Direct man-to-man comparisons were made with 1,288 pairs of students, carefully matched as to intelligence and scholarship. The final criterion was student achievement as measured by tests and examinations most of which were objective.

In 46 of the experiments, or 78 per cent, a more or less decided advantage accrued to the paired students in the large sections. Only in the remaining 13 experiments, or 22 per cent, was there any advantage in favor of the smaller

classes. At every intelligence level the paired students in the large sections excelled their mates in the small. Except at the very extreme, where results favored the superior students, the relative gain in achievement was no greater for the higher levels of intelligence than for the lower. It would seem that, except in the case of a few exceptionally capable and zealous students, there is considerable waste of intelligence in both large and small classes. At every scholarship level the paired students in the large sections outstripped their mates in the small. The excellent students profited somewhat more from large classes than did their less conspicuous classmates. Large classes, however, seem to have spurred every type of student to higher levels of attainment.

Conclusions: "Since small classes, other things being equal, greatly increase cost of instruction, they must be justified on other grounds. In the light of the consistent results of this investigation, it would seem that it will be extremely difficult to justify them on the ground of superior student achievement."[1]

Our concern on this occasion relates not to the merits of the class-size controversy but rather to the influence which this extended investigation has had upon the character of educational thinking in the University community. As this investigation proceded, one man after another was forced to revise his judgment about the usefulness of small classes. This, while important, was less significant than the resulting caution induced in college teachers concerning others of their cherished illusions. Many of these instructors have sought to apply in part the methods of this study to other problems, with a resulting clarification of the results of their own teaching.

Is it useful to a teacher to know in accurate terms the degree to which students retain learned knowledge?

In our eagerness that students acquire the content of our courses of instruction, the facts and principles that we set before them, we college teachers are prone to overlook the fact that forgetting is quite as normal a process of the human mind as is the fact of learning. Even with the best of intention and without dereliction as to study habits, students find it impossible to retain all that they read or hear and for the moment acquire. The peak of attainment which characterizes the assiduous student at examination time is always much higher than it is at any subsequent period, so easily does nature surrender impressions of a complex and slightly imbedded sort.

[1] Earl Hudelson, *Class Size at the College Level,* pp. 256–75.

The facility with which learned material slips away we find it hard to realize, and our teaching proceeds as if learning without forgetting were the whole of the educational process.

Although the phenomenon of forgetting is of the deepest moment to educational procedure, it has been given but little scientific study, and almost none at the college level. As a consequence we blunder in our methods and our judgments, blindly striving against natural forces that we should make our allies, or, at least, not treat as perverse enemies. One of the commonest results of our ignorance is the tendency to expect that students remember far more than they do from courses which they have previously studied. We proceed with course X as if the student were really in possession of the material which we assume was given in course pre-X. In time we discover that this is not the case and then realize that much of our own instruction has gone astray because of our false assumption. Again, in our own teaching we fail to realize how little that we offer the student he will really acquire in any permanent form because he will forget our instruction just as he did that of the instructor who preceded us. Some appreciation of this phenomenon we should all have, and some objective knowledge concerning it should be accumulated in reference to all our courses. A small contribution to the problem has recently been made by Dr. Palmer Johnson, a member of our staff. With his permission I shall present certain of his data at this point.

The problem upon which he worked is of the nature of prerequisite courses. Specifically he investigated the relationship of courses in elementary botany to sequence courses, particularly to courses in agriculture and in forestry. As a part of this study he found opportunity to study the permanence of learning in elementary botany. The Department of Botany had for some time been measuring the achievements of its students by means of objective examinations given as the final examination at the close of each college quarter. For the year 1926–27, the total for the three quarter examinations amounted to 587 different test items. These items covered, as did the content of the course, the subjects of comparative morphology, histology, algology, cytology, morphology of flowering plants, my-

cology, and physiology. The test items were in the form of true-false and completion questions.

From among these 587 test items Dr. Johnson selected 265 items for a retest examination to be given to the same students at the opening of the Fall Quarter of the year following that in which they had taken the course in elementary botany. By very careful and somewhat elaborate statistical studies he determined the measuring value of each of these items and combined them in an examination of two hours' length. The students to be tested were to be found in sequent courses in forest mensuration, silvics, agricultural biochemistry, phytochemistry, soils, fruit-growing, principles of genetics, plant pathology, and farm crops. Between the time of the retest and the dates of the initial examinations there had elapsed, three, six, and nine months for the several parts of the test. The study sought to give answer to the question, "How much of what students know on a final examination in elementary botany do they retain for a period of three, six, and nine months?"

All of us would expect considerable forgetting over time intervals as long as these, but few of us are prepared to learn that the loss of knowledge is as great as it is. The mean score at the close of the course was 207.4 points; three months later the same students scored 117.3 points, thus suffering a loss of 43 per cent of what they knew at the end of the course. For another group of students the end of the course score was 141.8, and six months later it had dropped to 74, showing a loss of 47.8 per cent.

By the further courtesy of Mr. Johnson, I offer here two figures graphically portraying these results. Figure 1 shows for each of twenty-four students a picture of what he was able to do by way of immediate recall, the upper bar; and his reduced attainment after the lapse of time, the lower bar. Figure 2 gives the median scores and interquartile ranges on the 265 item examination for pre-test, immediate recall, and delayed recall at three, fifteen, and twenty-seven months after completion of the one-year course in elementary botany.

Thus, it appears that the normal retention of the amount learned in elementary botany is but little more than 50 per cent. Almost half of the hard-earned acquisition has disappeared within a period

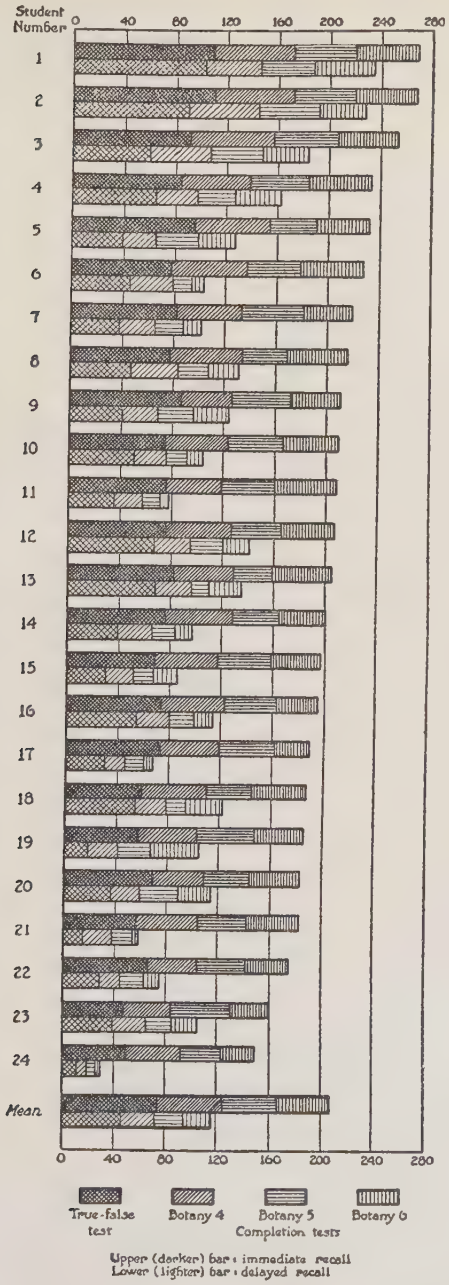

FIG. 1.—Immediate recall and delayed recall scores on Botany Test 4-5-6 (24 cases. Test for delayed recall given three months after completion of course).

of from three to six months. When one interprets these data, it must be borne in mind that the students tested had elected botany

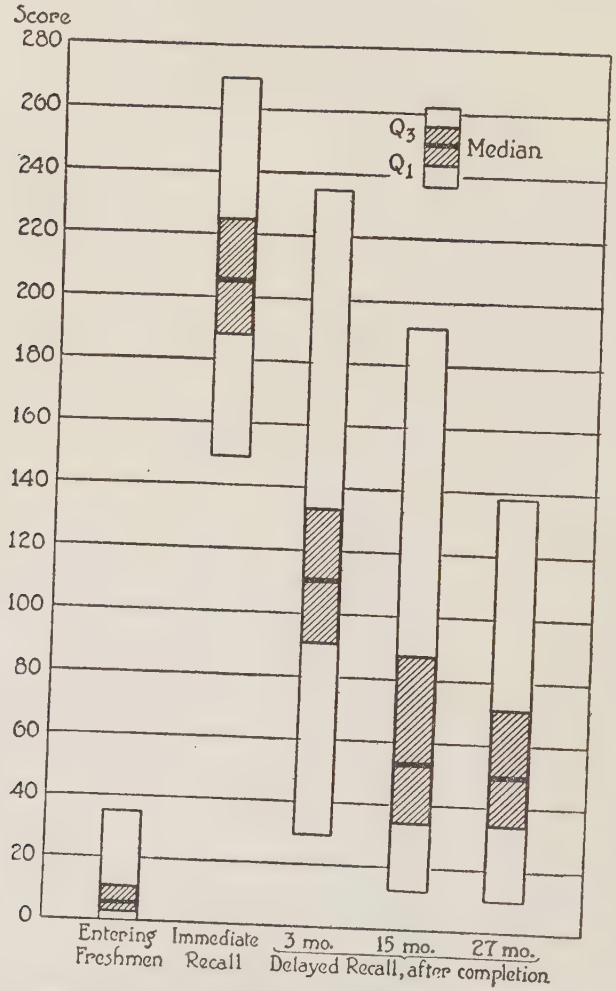

FIG. 2.—Ranges, interquartile ranges, and median scores on Botany Test 4-5-6 of students at various intervals after completing General Botany 4-5-6.

and had elected to do their major college work in fields for which botany is regarded as a genuine prerequisite. They can hardly have been taking it as an indifferent means of earning college credits. We

may, therefore, presuppose as real an interest in the subject as college students are likely to show in any beginning course.

The data reported in Dr. Johnson's study are too restricted for any broad generalization in the matter of college instruction, and it is due him to say that he offers no such escape from the laborious task of further investigation. The substantial character of what he has discovered is of sufficient moment to give us pause in some of the assumptions commonly made by college teachers. You are teachers of second-year courses. What do you expect your students to know of the work of the first year when they come to your course? Have you any reason to believe that your assumptions are justified by the facts, or that they are even in reasonable conformity to the essential nature of the human mind in its learning and forgetting aspects? What guaranty do you offer that what students learn from you will become a permanently useful bit of knowledge or skill? Are you reasonably certain that you are not making assumptions of knowledge too great and thereby lessening the effectiveness of your own teaching? The obvious reply to all such questions is the admission of ignorance unless you possess some power of divination withheld from the mass of college teachers or unless there are researches in the literature which I have been unable to locate.

One safeguard against forgetting is the practice of relearning and overlearning commonly employed by good teachers in all the fundamental processes of education. It is not enough that a student give just sufficient attention to a fact or a bit of skill that he may reproduce it on examination day. A fact which hovers just above the threshold of memory at one moment will likely be below that threshold in a few hours, and much below it in the course of a few days. If the fact is to be irrevocably fixed in memory, it must be brought back again and again through a long period of time, relearned, if necessary, and overlearned certainly, lest it subtly steal away from the grasp of the all-too-plastic nervous system.

Some of this relearning is obviously the business of the instructor who first presents a fact to a student. If the fact is genuinely important, then he must guarantee to the student the possibility of repeated and frequent contact with it. It is his obligation to set the instructional stage so that the essential repetitions shall occur. It is

not enough, for instance, that the teacher of anatomy shall present the essential facts of body structure through the lecture and the laboratory. He must provide for the repetition of these facts until they are wrought into the memory of the student so that the lapse of time will not efface them.

Just here I would say a word concerning the distributive obligations of instructors in sequential courses. A very common plaint of instructors in the later courses of a sequence is that students are illy furnished with the assumed contents of previous courses. I sometimes wonder that this type of criticism is so often in the reverse order; for in the field in which I am most at home, the judgment would seem quite as reasonably to lie in the opposite direction. The implication is all too frequent that the instructors in these prerequisite courses have done their work badly. This may often be true. But may it not also be true that the instructors in the later courses have an obligation that stretches backward to courses previously taken? Thus, is it not fair to expect that teachers of pediatrics will utilize in their instruction all that the teachers of anatomy, physiology, pharmacology, pathology, zoölogy, chemistry, physics, and mathematics have labored to provide the student of pediatrics. Unless the teacher of pediatrics calls up in his instruction all the rich body of factual knowledge and principles taught by the laboratory courses, it will, of course, have been taught in vain. To put the matter differently, the teaching of anatomy is not the business of the instructor of anatomy merely. To be sure, his is the initial task; but the successful fruition of anatomical teaching is the work of the whole series of instructors whose contact with the student follows his. Relearning again and again the essential facts of anatomy in varied and changing contexts, the student may come in time to be their master, his knowledge the outcome of many instructors through several years.

Is it useful for a college teacher of elementary science to have a clear understanding of just what the individual laboratory work of a student adds to his possible acquisitions from lectures, demonstrations, quizzes, and readings? May I first quote upon this matter one of my colleagues, Dean E. M. Freeman, himself a scientist of distinction?

Since the scientific method has been so universally accepted, it has also been quite generally taken for granted that all of the scientists' activities are equally sound in value—a most unscientific conclusion. Our science teachers in colleges and universities have a dual rôle: they are, first, scientists and, second, teachers. Do they apply the same scientific method to their teaching that they use in their investigation in science? Have they an experimental attitude toward classroom procedures? There is not much evidence that this is the case. Certainly the published scientific experiments in this field are few in number.

Perhaps the best illustration of this anomalous situation is found in the commonly accepted use and the prevailing estimate of the value of the laboratory method in the teaching of science. Now the laboratory method has been a most effective one for advancing our knowledge in the sciences. It is unquestionably the foundation stone of scientific investigation. But does it necessarily follow that success in the teaching of science can only, or even chiefly, be obtained by the laboratory method? That such a method of teaching science is actually superior requires scientific proof.

Modern conditions in our colleges and universities have brought rapidly increasing demands on the time and resources of teachers of science. The tremendous expansion of human knowledge has increased and complicated the curricular requirements of colleges. Large bodies of students and necessary economies in administration and teaching resources call for a close scrutiny of expenditures and the greatest possible efficiency. Science teachers are becoming acutely aware of the fact that savings in time and resources gained through cheaper and more effective teaching may leave for them greater opportunities for research.[2]

In keeping with this view, a number of our best teachers in science have co-operated in experimental studies of the usefulness of the laboratory. One such study, by Dr. Victor Noll, covering three years of investigation in the field of chemistry, is now about to appear in book form. The method was that of parallel sections, under controlled conditions with the number of variables reduced to the lowest possible number. From year to year the method was varied to test out different factors. The achievements of students were measured in numerous ways and always by reliable objective tests. The results of the experiment can best be given in Dr. Noll's own words:

When two groups were compared, one of which had had five hours of laboratory work per week, the other having had three hours of laboratory work and two hours per week of outside reading on assigned topics in chemistry, the former group showed consistent superiority on all measures of achievement used.

[2] Archer Willis Hurd, *Problems of Science Teaching at the College Level,* Introduction, pp. 1–2.

Although none of these differences was certainly reliable, several (particularly those brought out by TCA scores) were almost three times the standard error of the difference.

Comparisons of two groups, one having five hours of laboratory work per week, the other having three hours of laboratory work and one hour of recitation or oral quiz per week, showed the latter group to be superior to the majority of cases, although never by a significant amount. These two groups were studied over a period of four quarters of instruction in chemistry, two quarters being in general inorganic chemistry and two quarters in qualitative chemical analysis.

Comparisons of two groups, one having five hours of laboratory work per week, the other having three hours of laboratory work per week, showed the former group to be consistently superior in mean achievement and almost as consistently the less variable of the two groups. None of these differences proved to be significant. Because of the presence of certain other factors not held constant, the cause of this superiority is left somewhat in doubt. Available data on the effect of greater interest in the subject of chemistry indicate that the superiority of the five-hour laboratory group may be due as much to the factor of interest as to the additional laboratory work.

Comparisons of groups supposedly differing in interest or motivation for the subject of chemistry showed the group majoring in chemistry to be consistently superior in achievement as measured here, although none of the differences was certainly reliable.

As far as any measures used in this study are concerned, two hours of laboratory work out of five per week do not seem indispensable. The fact that students can be deprived of these two hours without significant loss would appear to be rather important evidence on this point. As for substitutes for laboratory work, of the two that were tried, recitation or oral quiz seems to be a fairly profitable substitute, but outside reading does not. It may be that a different plan for the outside reading or a different selection of topics would show results different from those found here.

Oral quiz and recitation seemed to be somewhat more effective than laboratory work during the experimental period and apparently the salutary effect carried over to sequent courses. This seems to be a rather important fact from the administrative point of view. It needs further experimental verification before being accepted unqualifiedly.

With two of the experimental groups compared, a follow-up study was made of the achievement of these groups in sequent courses in chemistry over a period of two quarters. There was no evidence in this study to show that the group that had been given one hour of recitation in place of two hours of laboratory work had lost anything because of this substitution.

I shall give one further illustration, this time in the field of curriculum revision. For many years we have offered in the College of

Education a group of courses required for all prospective high-school teachers. These courses amounted to a requirement of twenty-five quarter credits. About six years ago, one of our instructors, Dr. W. E. Peik, undertook an investigation to determine the usefulness of this requirement. He secured all the texts, syllabi reading lists, and examinations used in all the courses, and analyzed the material into small items or instructional units. From this analyzed data he constructed a checking list of 814 items. These were then examined to discover the instructional time devoted to each, the cases of duplicated and recurrent treatment, the sequential arrangement, and the answers to various other problems. Finally, he submitted the complete list of items in printed form to several hundred alumni who had had the entire offering in our institution. He sought alumni reactions upon the following five points. Do you remember studying this topic? Has it been of practical use to you in your work? Has it been useful in your educational thinking? Do you recommend that it be omitted from the requirement? Do you advise expanded treatment?

The results of this investigation comprise six large typewritten volumes now on file in our offices. The condensed results and methods appear in a single printed volume. On the basis of this study we have already made important changes in this curriculum, and others will follow.

The method of Dr. Peik, with some enlargement, the writer has applied to the whole subject of psychology. Using an analysis of fifty texts, and with the co-operation of our colleagues, we have compiled a checking list of 2,584 items or topics in psychology that may be used for instructional purposes. There are many uses for such a list, but the selection of curriculum content and the orientation of adequate examination procedure are among the most important. The list has already been used with four hundred college Juniors entering our College of Education in September, 1929. These students are supposed to have had already an introductory course in psychology. On entrance to educational work they were asked to answer certain questions regarding each item in this list. Among other things they were asked to indicate if they remembered having studied the topic and, secondly, if they now understood it

sufficiently well to explain it on an examination should they be asked to do so. The responses are illuminating. The data which were divided into groups based upon the institutions in which the junior college work was done show distinct institutional emphasis, although there is a surprising range of checked items in every case. More interesting, however, is the student's own discrimination between his memory of once having studied a topic and his assurance of present ability to explain it. Roughly, about 33 per cent of the topics were marked as remembered, while the figure for present understanding is only 13 per cent. The meaning of this marginal 20 per cent of vague and hazy memory is not alone of theoretical interest but a very practical concern of teachers of psychology. However, it is but one of the scores of questions that bristle forth from the pages of tabulation in this study.

One other use we have made of such a list, namely, to analyze textbook content.

Three texts, *Psychology for Students of Education* by Gates, *Educational Psychology* by Starch, and Woodworth's *Psychology, a Study of Mental Life,* have been checked page by page against the original list and against the combined judgment of instructors. All of these books have wide use in introductory psychology courses for teachers.

The results of this checking reveal: (1) The emphasis differs from book to book. One text devotes 87 pages to instinct and emotion; another, only 12 pages. One allots 99 pages to the nervous system; another only 7. The causes of individual differences occupy 15 pages in one text and only 2 pages in another. One gives 31 pages to animal behavior; another gives none. Statistical techniques fill 22 pages in one book and are omitted in another. (2) When set alongside expert opinion as to what should be taught, the contents of the several texts reveal varying adequacies. The psychology of play is judged important by 95 per cent of respondents; one text gives it two pages, another one page, and the third omits it altogether. Eighty-five per cent regard memory as important. One text gives it 14 pages, another 6 pages, and the third none. This study should be extended to cover many texts, and, if handled chronologically, would reveal trends in instructional emphasis through the period studied.

One further extension of the checking-list technique we are now making in the field of clinical medicine, but explication of this must be omitted. Nor does time permit the elaboration of experiments in the teaching of physics, of mathematics, of German, of English, of law, of industrial chemistry, of the attempt to improve the reading

abilities of students, the explorations into the causes of student failure, and a score or more of studies in the measurement of student abilities, the construction of reliable and valid examinations, and the analysis of the traits of superior college teaching. However important may be the factual results of these investigations, they do not constitute the major significance of our endeavors in collegiate educational research. This lies in the altered and altering attitude of the university community toward the understanding and solution of college problems. Sad as it may seem, we must reckon among the serious obstacles to the improvement of college teaching an indifferent, if not hostile, attitude on the part of many college teachers. They simply accept their present teaching competence as adequate and are irritated if it is suggested that their ways may be changed for the better. Numerous influences contribute to this state of mind.

In the first place, it must not be overlooked that few men in any field ever strive for the highest excellence but are, rather, content with comfortable mediocrity. In the sheltered and non-competitive conditions which surround teaching in American colleges the external urges to high competence are far from effective.

In the second place, the academic world in America has rather definitely made known its judgment that teaching is second in importance to scholarship and that it ranks definitely below educational administration. With exceptions so rare as to create wonder where they occur, its prizes, its high ranks, its honorary degrees, its lucrative salaries, go to presidents and deans, to its specialized scholars, its men excelling in research. A college president will flame with enthusiasm about the importance of college teaching and then will bribe an excellent college teacher into an administrative position by a 30 per cent increase in salary and additional perquisites of office. The difficulty of urging men whose only claim is excellence in teaching and service to students to the highest academic recognition is well known and is not confined to a single institution. The influence of this situation upon college teachers in general, and upon young men in particular, is to make them think of teaching less highly than they should, as something second-rate at the most.

A third influence contributing to restrictive attitudes on the part

of teachers is the easy emphasis upon dulness in students. If students are dull, they do not learn; it is easy for an instructor to reverse this formula and to say that if students do not learn, it is because they are dull. Such free association in the teacher's mind makes self-excuse a virtue rather than a sin. Thus a teacher who fails 50 per cent of his students can, without self-reproach, transfer the blame for such wide devastation to their previous training and to deficient human nature.

A fourth factor making for a laissez faire attitude on the part of instructors toward teaching is ignorance of instructional results. No teacher may have more than a partial comprehension of what students acquire from his course. He may overjudge or underestimate their acquisitions, but educational science has not yet given him a complete and accurate technique for determining the results of his own efforts in terms of student growth and changes. Because of this deficiency, he is continuously in the unhappy state of judging his own teaching competence in ignorance, often wrongly without doubt.

Admitting that there are these and possibly other factors contributing to an indifferent attitude that tends to insulate the teacher from effective stimuli to his own improvement, it must still be said that no good college can tolerate such an attitude indefinitely. While in this state no college teacher will make conscious effort to improve his work, nor could he well do it if he tried. Wherever this outlook upon the problem of teaching is found, the problem of its alteration protrudes as a first and most important matter to be considered. Nothing more definitely conduces to a changed attitude than fair and unbiased research into mooted problems, the co-operative inquiry for factual material bearing upon questions at issue.

While we would place this changing attitude toward college problems as a first-fruit of our research endeavors, we are also slowly creating a body of new literature concerning college education, a literature based upon the experimental method and containing factual data. Seven books have already appeared from the University of Minnesota Press; others are in process of publication.[3] In addi-

[3] "College Problems Series": F. Stuart Chapin, *Extra-Curricular Activities at the University of Minnesota* (1929); Earl Hudelson, *Class Size at the College Level*

tion to these major publications there have been a score or more of journal publications. While no claim is made that any of these publications give the final word upon the matters with which they deal, it is certain that future students of these problems must for a long time give serious attention to the data they contain. Could we have twenty-five years of equally productive work at Minnesota and at other institutions, the whole character of educational discussion in the college field would shift to a new level, a level of factual information and of scientific method.

To be sure, this shift would be a painful process for some of us. We could no longer dispose of profound educational matters in Phi Beta Kappa orations or the inaugural addresses of itinerant college presidents, those academic counterparts of Independence Day political science. The free flow of educational theorizing would suffer the painful limitation of being hampered by facts—but who doubts that such restriction would be a distinct gain to our college students even though it make academic shades less alluring to certain types of present-day college professors?

What we have been trying to do at Minnesota, other institutions are doing in like or different ways. Published material accumulates from many sources, and there are few colleges that could not use this means of instructional improvement to their own advantage.

What do the colleges now have as capital in beginning a program of collegiate educational research? The first item of importance to be noted is that every college has a plant in which all the basic prob-

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(1928); Archer Willis Hurd, *Problems of Science Teaching at the College Level* (1929); Palmer O. Johnson, *Curricular Problems in Science at the College Level* (1930); Victor H. Noll, *Laboratory Instruction in the Field of Chemistry;* W. E. Peik, *The Professional Education of High School Teachers* (1930); Earl Hudelson (editor), *Problems of College Education* (Contributors: E. M. Hopkins, L. D. Coffman, M. E. Haggerty, A. J. Klein, E. C. Elliott, F. Englehardt, D. J. Cowling, R. R. Price, G. S. Ford, L. V. Koos, J. M. Wood, D. A. Robertson, R. M. West, J. B. Johnston, E. H. Wilkins, D. G. Patterson, W. S. Miller, S. Blanton, F. M. Rarig, H. S. Diehl, A. D. Blitz, F. S. Chapin, E. Hudelson, H. A. Erikson, E. M. Freeman, C. M. Jackson) (1928).

In Press: John E. Bohan, *Student's Marks in University Courses;* Alvin C. Eurich, *An Experimental Study of the Reading Abilities and Disabilities of College Students;* Alfred Victor Overn, *Indices of Supply and Demand of Teachers in Minnesota;* James Greenleaf Umstattd, *Student Self Support at the College Level.*

lems to be studied exist. Even the smallest college has its student body, its curriculum, its methods of instruction, its staff, its buildings, its means of support, or the lack of it, its problems of control and direction, its alumni, and its interested public. Wherever a college student treads, there arise all the basic educational problems. While certain problems are intensified and complicated in the larger institutions, it is also true that the smaller colleges fairly reek with issues about which little authenticated information is available and that college practices prevail for which there is little or no factual support. It is also true that many of these matters are more easily studied in the smaller and simpler environment. The simplification of experimental conditions is an ever-present drive in controlled investigation, and in some respects the smaller college would seem made to order for the scholarly study of college problems.

Let us note, therefore, as our basic institutional resource for the investigation of college education, the existence of the plant from which the problems of college education arise. In this respect the development of research in the college field has an obvious advantage over such endeavors in the elementary- and secondary-school fields. When college professors of education have sought to examine the problems of the lower schools, they have had to go outside the college walls, to make contacts with an alien administration, or, barring this, to establish, at great expense, laboratory schools on the campus. Diversely, in the study of the college problem the whole machine—the investigator and the thing to be investigated—are under one organization and within the narrow geographical limits of a single campus.

The second resource for the study of college problems is the presence in the institution of men and women trained in methods of scientific investigation. We may be dealing here with a less universally present factor than in the matter just discussed, but the probabilities are that most colleges are richer in this respect than they may at first think. Experience testifies that, once the idea of investigating college problems arises, aid will be forthcoming from unexpected sources. College presidents and deans are continuously plagued by unsolved problems, and in some cases they have been able to save the time from routine performance to search for the

facts upon which wise decisions may be made and constructive educational policies developed. It is quite probable that more of them could do so if the importance of such a line of action should become clear to them. Much depends upon a clear understanding of the importance of collegiate educational research.

Much, also, depends upon the resolute will of the administrative officer to defend his own intellectual alertness in regard to the understanding of his own problems. The spirit of the dean who said, "I'll be damned if I'll surrender to routine; I am going to study my job as well as perform it," is widely needed, and evidence increases to show that that spirit is growing. An administrative officer with this outlook will add his own mite to needed knowledge, but he will also do something of vastly greater moment. He will make his institution habitable by scholarly students of educational problems and will generate in his faculty a sympathy with educational research. He is likely, further, to find that some members of his staff in the strictly academic fields also decline the "damnation of routine," and themselves set about the examination of their own practices with a consequently increased intellectualization of the tasks which they daily perform, possibly with an enlargement of professional knowledge.

Two reasons prevail for the encouragement of a responsive interest on the part of the academic faculty in educational research. In the first place the faculty is the responsible, and, in the end, the only effective, agent in the improvement of college education. They who are only students of education can, at the best, do little but produce new facts; and frequently they can do this only with the co-operation of academic teachers. The latter alone are in a position to make new facts useful in college improvement. The second reason is even more important, namely, that many of the methods of research useful in the study of education have had their origin and their greatest development in strictly academic fields. Education has done less than some suppose in the creation of new scientific methods but has levied extensively upon the devices and methods of other fields of investigation. This point may be emphasized by an outline of the currently used methods of educational research prepared by the

writer with the assistance of his former colleague, Dr. W. C. Olson. This outline is as follows:

METHODS USEFUL IN EDUCATIONAL RESEARCH

1. Documentary
   - *a*) Historical
   - *b*) Legal
   - *c*) Analysis of current literature
   - *d*) Textbook analysis
   - *e*) Institutional records and reports
   - *f*) State records and reports
   - *g*) Federal records and reports
   - *h*) Catalogues
   - *i*) Courses of study
2. Questionnaire
   - *a*) Fact
   - *b*) Opinion
   - *c*) Simple information
   - *d*) Variable verbal response
   - *e*) Yes *or* No
   - *f*) Checking
   - *g*) Ranking
   - *h*) Rating
   - *i*) Weighting
3. Rating scales
   - *a*) Graphic (cross on the line)
   - *b*) Order of merit ranking
   - *c*) Man-to-man comparison
   - *d*) Scale sample comparison
   - *e*) Range of values
   - *f*) Score card
   - *g*) Others
4. Personal interview
   - *a*) Prepared questions
   - *b*) Unstandardized
   - *c*) Trained interviewers
   - *d*) Untrained interviewers
5. Description and analysis based on—
   - *a*) Uncontrolled observation
   - *b*) Controlled observation
   - *c*) Stenographic reports
   - *d*) Verbal analyses
6. Survey
   - *a*) Population
   - *b*) Buildings
   - *c*) Finances
   - *d*) Organization and administration
   - *e*) Teaching staff
   - *f*) Pupil progress
   - *g*) Curriculum
   - *h*) Educational results
   - *i*) Others
7. Case method
   - *a*) Individual history
     - (1) Health
     - (2) Social
     - (3) Educational
     - (4) Economic
   - *b*) Individual examinations
     - (1) Medical
     - (2) Psychiatric
     - (3) Educational
     - (4) Psychological
     - (5) Family history
8. Experimental
   - *a*) Laboratory
   - *b*) Classroom
   - *c*) One group
   - *d*) Equivalent groups
   - *e*) Rotation groups
   - *f*) Learning
   - *g*) Physiological
   - *h*) Psychophysical
   - *i*) .....
9. Bases for equation of groups
   - *a*) Random selection
   - *b*) General intelligence
   - *c*) Status in experimental trait
   - *d*) Socio-economic status
   - *e*) Marks in ———
   - *f*) Educational tests—
   - *g*) .....
   - *h*) .....
10. Mathematical formulas

The manner in which these methods shoot across the intellectual interest of a college faculty is fairly clear from the mere listing of them. Our Minnesota experience has given us copious illustration of their pervasive character. At one time or another during a five-year period we have had the assistance of men and women, from many teaching fields, who have enriched our understanding, not merely of the problems to be studied, but also with clear perceptions of the applicability of methods which they knew better than did we. The individual departments have been given earlier, and it should here be stressed that inquiring minds are not confined to any college or university department.

To be sure, some members of a college faculty are more closely in touch with methods useful in educational research than others are likely to be. Among these we may place first the psychologists. The content of currently taught psychology is largely a development of studies made during the past thirty years. It still bears the marks of the experimental method upon it, often the crudities and partiality of a rapidly changing body of knowledge; but, also, it is redolent with the spirit of investigation. Among the more than seven hundred psychologists listed in the *1928 Year Book of the American Psychological Association,* more than half indicate an interest in education. Two hundred and six are teaching courses in education and educational psychology, and 238 name these and related matters as their fields of research. If we couple this evidence of interest with the obvious pertinency of the methods of psychology to the study of educational matters, it would appear that here exists a resource widely distributed among colleges for an attack upon the problems of college education, although it would be excessive to claim that all psychologists are assets in this endeavor.

It would be gracious to speak with equal enthusiasm about the possible services of the sociologist, since it is obvious that many of the problems of college education are essentially social in character. The sociologists, however, have made less progress in the adoption of dependable methods of educational investigation than the possibilities and importance of social study warrants. Genuine helpfulness from this source, already too long delayed, appears to lag except in so far as the methods of the older disciplines are being appropriated by the sociologists.

There is ample ground for belief that the situation is changing. Within the field of sociology itself there is rapidly growing up a genuine interest in the scholarly investigation of social problems by the methods of science. The number of persons so interested is steadily growing, with many recruits among the more recently trained men; and the body of literature from this source is increasing in volume and quality. The usefulness of an investigator who is sensitive to the social aspects of college education and equipped with the technical training for social research is undoubted. It is a pleasure to acknowledge in this connection the co-operation which we have received on numerous educational studies at Minnesota from Professor Stuart Chapin, and, in particular, his leadership in the study of the extra-curricular activities of college students.

One would like to say in this connection that the educationists on the college faculty are an unfailing source of aid in the study of college education. Unfortunately, this seems not to be the universal situation. In fact, in some cases, sober judgment places them on the side of liabilities rather than elsewhere. The causes for this condition vary. Lack of ability and effective training, and unwarranted presumption of competency on the part of teachers of education, as well as prejudice among academic teachers, play their part. Wherever the educationists have met rigid standards of high scholarship, have proved themselves good teachers and have been wise in service and co-operation, the way is opened for all the skill which they may offer in the study and control of the college problem. In many places they have become, as they should be, the leaders in such endeavor.

It will not be out of place to utter here a useful caution. In the first place, the speaker believes that educationists can best approach the college problem by the way of research rather than by way of didactics. From the viewpoint of sound educational knowledge, the college is a relatively new field. Most of the serious study bearing upon its problems is a product of the last decade, and is antedated by a generation of research in elementary education and to a somewhat less extent by investigation in the secondary field. The material available for instruction in college education is small, partial in character, and relatively unorganized. To assume otherwise is pre-

sumption and insincerity. Because of this fact, the educationist is on insecure ground in essaying that his knowledge of college matters exceeds to any great extent that of good academic teachers who have garnered from rich experience a fund of principles and useful traditions. Until college teachers of education learn to improve their own classroom performances, they may well sit in humility at the feet of master teachers in academic fields, one or more of whom almost every college numbers among its present staff. The immediate import of educational inadequacy is that teachers of education should go slowly in offering courses in college education. It is a doubtful measure of progress that more than twenty-five college departments are now attempting to do just this thing, whereas but a few have a staff trained and equipped for this purpose. Let us have intelligent investigation, as extensive and thoroughgoing as possible, but let us maintain a scholarly conscience in the realm of didactics.

One resource available in the larger institutions is the presence of graduate students—some in education, others in subject-matter fields. Increasing social pressure is certain to impinge upon our graduate schools to recognize the need of professional equipment on the part of college teachers, and the right of graduate students to professional training during the graduate years. One need only cite the recent action of the Association of American Colleges in requesting graduate schools to recognize a situation that is hastening upon them, and the tendency of state authorities to make professional training a requirement for teaching in public junior colleges. The graduate schools in whose faculties the teachers of education have their place must be prepared to guide graduate students both into the available knowledge and, even more important, into the attitude and technical competency to study their teaching and related problems. It is ancillary to this fact that some graduate students may become the most effective agents of a research program.

Quite as important as any technical equipment on the part of individuals is the matter of morale in the college situation. The improvement of college education is based upon the presence of a spirit of good will among those responsible for such improvement. This means that the academic staff and the teachers of education

must enter into a relation of genuine co-operation in the study of college problems. The disgraceful hostility of these two groups in American colleges must be overcome in behalf of the overwhelming problems which they face in common. It is the part of educationists to meet the present unhappy situation with an honest recognition of their own limitations, a genuinely scientific conscience, a desire to be of service, and an epidermis impervious to the cynical jibes and ignorances of some of their academic colleagues.

APPENDIX

REPORTS ON CURRENT METHODS OF TRAINING COLLEGE TEACHERS IN VARIOUS HIGHER INSTITUTIONS

The reports that follow were prepared by graduate deans, college presidents, and others in response to a request for a brief account of the methods used in their respective institutions in training college teachers. They are summarized briefly in chapter viii.

CLARK UNIVERSITY

A large proportion of those who complete work for the Master of Arts degree or that of the Doctor of Philosophy in our Graduate School, enter upon college or university teaching. Each year several of the young men, upon graduation from the College with an A.B. degree, enter directly upon college teaching. We are, therefore, deeply interested in the training of college teachers. Instruction in psychology and in education is recommended to all students in the College who intend to enter the field of teaching, and in our Graduate School of Geography we have established a special chair, entitled "Geography in Education." We established that chair because we believe that everyone who intends to go into the teaching profession should make a special study of the problems associated with the selection, organization, and presentation of their subject matter. They should understand, as clearly as they can, the educational processes, and should gain a professional point of view.

In our summer school, which specializes in the social sciences, geography, history, and economics, we offer special courses in the teaching of geography and history, and some day we may add them in the field of economics.

In our Home-Study Department we have several courses, well organized, to help those who are teaching geography, and in the Extension Division during the winter we offer courses on the teaching of special phases or divisions of geography. Those courses are taken largely by teachers in Worcester and vicinity. Each year since I have been here we have held a New England Geographical Conference, and on the programs of those conferences we have included papers and round-table discussions of the educational or professional problems associated with the teaching work.

In the conduct of our School of Geography we have introduced two features which may be of interest to those present at the Institute. At the opening of the university year we take all of our graduate students in geography into camp

here in New England and, with a group of three or four members of the staff, undertake a piece of original research work and field mapping. Through that laboratory method we aim to inspire a love for research and develop in each one a certain amount of independence in the field. The possibilities in that work are great, and we are very much pleased with the results. We have carried on this field school of geography during the last three years and are planning to continue the work. It takes about one month in the fall season, which means that our regular lecture work at the University does not open until November 1.

In the spring we close all formal lecture work on May 1 and assign the balance of the academic year to a reading period. Definite recommendations are made for reading, and frequent conferences are held with the members of the staff during the remaining weeks of the year.

Throughout the months when courses are in progress our work is largely informal. We use the seminar method and private-conference method in training our graduate students to enter upon their professional duties. There is a motto over our workroom door which I think reflects the point of view of our Graduate School of Geography: " 'The very best kind of education is obtained in doing things one's self under competent direction and with good guidance.'—Charles W. Eliot."

Wallace W. Atwood

COLUMBIA UNIVERSITY

In reply to the form questions raised, the following statements are submitted:

a) We have no general program for preparing prospective college teachers.

b) Quite recently I asked the several heads of departments to give me their views on this subject. The practices are so various and the attitudes of the departments so different that I found it impossible even to digest in any adequate fashion the results of this inquiry. Some of them are in favor of developing in this direction. Others are frankly opposed. There are endless variations between the extremes.

c) An informally constituted committee is actively at work to see whether it is feasible to propose a general program looking toward the better training of college teachers and, if possible, to formulate such a program. When this committee shall have completed its work, I hope that we shall know a little more about the matter than we now do.

d) In consequence of what I have just written, I am not prepared at this time to suggest any changes or improvements that could be made to advantage.

Howard Lee McBain, *Dean of the Faculties*

DUKE UNIVERSITY

Duke University does not claim to have accomplished through a fixed plan a great deal in the way of turning out first-rate undergraduate teachers. Con-

fronted for many years with the insuperable task of securing such teachers, we have, however, been impressed with the obligation resting on every graduate school to do what it can to aid in the vital cause; and we feel that we are accomplishing something in its behalf.

As I see the problem, the essential factor is the getting of capable men of the right makeup into the graduate schools. We cannot simply depend upon accident or chance to send them there. The call into other fields is too alluring; the conception of college teaching as a profession is altogether too low; or the misconception of its dignity and of its great opportunity for genuine men, too deep-seated to justify our relying on free choice or election as the basis for recruiting each year a reasonable proportion of college graduates to be further trained and inspired as future college teachers. It has been urged for years at Duke University that every department of instruction be on the lookout among the undergraduates for men of attractive personality, genuine human interests and sympathy, and first-class intellectual endowment, and encourage these men to look forward to teaching as a profession. They are advised to enter good graduate schools and are aided as far as possible financially. A goodly number of such men have later joined our own teaching staff, and others have gone elsewhere. I believe it the duty as well as the privilege of every college to do just this sort of thing. To be sure, graduate scholarships and fellowships ought to be awarded to brilliant graduates of promise as research scholars, but surely the work of the graduate schools is at least twofold—the training of college teachers as well as the developing of scholars. While the twofold task is sometimes solved in a one-fold way, in that the trained scholar may be a great teacher, that is not necessarily true or even likely. Both types of graduate workers should be encouraged and taken care of. Too often, however, the prospective good teacher, necessarily intellectually equipped, is overlooked in awarding assistance for graduate study, or he is simply given to understand that he is not the type for the graduate school. But college teachers must have graduate-school training; they must know their subjects thoroughly, must have training and disciplined minds, must crave further knowledge, and also must will to attain it. Else their minds stagnate.

In considering applications of graduate students for graduate assistantships especially, and for scholarships and fellowships, we make it a practice to keep in mind both types of men, the prospective promising teacher and the promising scholar. And we will not reappoint to graduate assistantships men whose work has not shown them to be acceptable in such positions.

In each department in which there are a goodly number of graduate students, one faculty member who is known as an outstanding teacher becomes the sponsor of the would-be teachers among the graduate students and meets them from time to time for discussions. Opportunity under his guidance is given these men to do some teaching of lower undergraduate work. Talks on teaching are made to groups of graduate students by faculty members who are known for their good teaching ability. The prospective teachers are also encouraged to visit classes

in other departments and observe the work of men who have become known as the outstanding teachers of the undergraduate college.

I seriously question the efficacy of the usual pedagogical courses to help beyond a limited way in the improving of college teaching. Good teachers are not made that way; with such outside help weak ones may the more readily acquire the knack of "getting by," but their influence on undergraduates is not often great and surely not enduringly good. It is real men of sufficient learning that youth respects and follows.

Also, it is made known to the graduate students that in making recommendations for college positions, teaching ability in its wide sense will be stressed as well as scholarship, that in fact the University will not recommend for such positions men who lack teaching qualification. Each department, through its representative, is requested to have ready an estimate of the probable teaching success of the graduate student at the time of his withdrawal from the graduate school; and this estimate is accessible through the dean of the graduate school for the use of any officer making recommendations of teachers.

WILLIAM H. WANNAMAKER, *Dean of the University*

DUKE UNIVERSITY

Dr. Wannamaker, educational vice-president of Duke University, has already described for this symposium the informal "apprenticeship" plan of training college teachers pursued by Trinity College prior to the organization of the University. In line with this plan the University took official notice of the problem of training teachers when it published in its graduate bulletin for 1927–28 the following statement:

> The Duke University Graduate School will endeavor to discover among the candidates for advanced degrees those students who show promise of becoming good teachers. Provision will be made in the various departments for the consideration and discussion of problems of teaching. Graduate students who expect to teach will be given opportunity to gain practical experience under the supervision of successful teachers. The Graduate School will keep such records as will enable it to recommend with confidence students who are likely to prove efficient as teachers.

At the time of publishing this statement the dean of the Graduate School requested every department offering courses leading to advanced degrees to work out and submit for approval of the Graduate Council a specific plan for training teachers. These plans have been formulated quite slowly, on account of the pressure of other developments during the past two years. For the present many of the departments content themselves with one or two lectures on teaching problems to the more advanced students, followed by a round-table discussion. The English Department during the past year scheduled a series of six such discussions for the benefit of advanced students.

So far as I know, no organized practice teaching has as yet been attempted. The Department of Education has, however, used its graduate students who are

interested in college teaching in conducting a series of experiments for the past five years with the Freshmen rating in the lowest fifth of the initial psychological test. An experiment has been conducted in which training for this group of students in study habits was provided. This was done in an elementary course in educational psychology, with emphasis upon the learning process and the transfer of ideas gained in the class to the study of other subjects the student is carrying. This experiment has apparently demonstrated two things: (1) The general standard of work maintained by the students given this special course is higher than the general standard maintained by the students in the second fifth of the class who do not have the course. (2) About one-third of the group seems to be unable to profit by the work.

In 1927–28, a seminar was offered in the Department, "Investigations of Study Habits." The students in this seminar worked out a special syllabus for the use of the class of weak Freshmen who were enrolled in the elementary educational-psychology course. The seven students enrolled in the seminar also undertook to hold conferences and do remedial work with the group of one hundred Freshmen assigned to the special course. This experiment has been continued. All work in this group is rigidly supervised by a regular member of the education faculty.

HOLLAND HOLTON, *Professor of Education*

HARVARD UNIVERSITY

In Harvard University no organized effort has yet been made to provide specific training for prospective college teachers or to supervise the work of younger instructors. Some students in the Graduate School of Arts and Sciences take formal courses in the Graduate School of Education, but the number is so small that it hardly affects the general problem.

Since graduate students and undergraduates are largely taught by the same instructors (we have no separate graduate faculty), and since many courses are open to both graduates and undergraduates, the student in the Graduate School during his years of study has constant opportunity to observe the methods of successful teachers, and undoubtedly profits by it. Furthermore, large numbers of students registered in the Graduate School of Arts and Sciences find employment during their years of study as instructors and assistants in different departments, and thus obtain some experience in teaching. There is, however, little effort on the part of older members of the faculty to supervise such teaching. In this respect, as recent discussions of the problem of training teachers have clearly shown, we do less than is possible, and, no doubt, less than is desirable. We hope during the coming year to improve conditions in this particular.

Out of the discussions of the past year one point has come to my attention which seems to me worthy of consideration, namely, "Is the college always quite fair in its treatment of the product of the graduate school?" Too often the recent Doctor of Philosophy is set to teaching the most elementary courses in his

subject, especially in colleges and universities where graduate teaching is in the hands of a separate faculty. This seems to many of us to be a grave mistake. The recent graduate of a law school does not begin his practice by trying cases in court, nor is the recently graduated Doctor of Medicine allowed to undertake the most delicate and difficult operations. The young architect is not called upon for the general design of a great building. But the newly created Ph.D. is often expected to undertake instruction in a large elementary course. That is just the course that demands long experience and a broad, general point of view. The young teacher comes to his first teaching after a year or more of intensive study of a particular aspect of a special field. As a brilliant student said to me not long ago, "After an intensive study of Old Norse literature I was given three sections in Freshman English." Surely such a man would have been more successful if he had first had to deal with advanced students, or, at least, with men whose interest in their subject had already been aroused; and doubtless such men would have gained more from the new teacher than the members of the Freshman English classes. I sincerely hope that this aspect of the problem of college teaching will be considered by the Institute for Administrative Officers.

GEORGE H. CHASE, *Dean of the Graduate School*

UNIVERSITY OF ILLINOIS

For a number of years several of our departments have offered teachers' courses in their respective subjects. These include agriculture, botany, chemistry, English, Germanic languages, history, economics, Latin, mathematics, music, and Romance languages. These courses are conducted by members of the staff especially interested in the technique of teaching. Although primarily intended for undergraduate students in their Senior year, they are frequently elected without credit by graduate students.

Recently the executive faculty of the graduate school, after a prolonged consideration of the recommendations of the Association of American Colleges on the preparation of graduate students for college teaching, has approved many of the suggestions contained in their recommendation. However, the faculty does not believe that the proportion of time now devoted to research is excessive; that it is large enough to have a poor effect upon the students' knowledge of their field or upon their teaching efficiency.

Many of our graduate students at some time during their course hold assistantships which give them experience in teaching; and that, frequently under supervision. On the whole, we believe that the question of better training of doctoral candidates intending to engage in college teaching is one that can be solved without the adoption of any radical changes. At any rate, I think that my colleagues on the executive faculty would agree with me that there is no necessity of "a reorganization of the graduate curriculum," believing that "curriculum" has no meaning in graduate work. It is our opinion that courses in education should not be required of graduate students, although we are in favor of introducing a plan for conferences and discussions about college teaching prob-

lems, to be conducted by a member of the faculty of the College of Education or someone who is fully equipped for such work.

I have read with great interest Dean Laing's address on "The Doctor of Philosophy and College Teaching." His discussion of the question is admirable. His suggestions are constructive and practicable, and in my opinion their intelligent operation would do about all that is possible.

ARTHUR H. DANIELS, *Dean of the Graduate School*

INDIANA UNIVERSITY

To earn the Ph.D. degree at Indiana University, a student is expected to acquire a comprehensive knowledge of the field of his major subject and a limited knowledge of one or two closely related fields, known as the "minors." This knowledge may be acquired through courses, seminars, and general reading. In addition, a student must submit a dissertation which is the result of original investigation. By doing research, the student is expected to learn how to work, to think, and to evaluate independently. Altogether, he is expected to acquire a scholarly attitude. In fact, the aim of the Ph.D. training might be said to be the making of scholars. But we do not make them; we give them the encouragement and opportunity to make themselves.

I have stated briefly what we do to make clear that we are primarily concerned with scholarship and only secondarily with teaching. There are some who believe that all that is necessary to do to make a teacher is to make a scholar. The scholar should have enough ingenuity to meet the teaching problems as they arise. But there are others who question ingenuity in this direction. Particularly do they question an interest in teaching. They suggest that too much emphasis on research has driven out such an interest or has prevented its development. They also state that the Ph.D. trained student goes to the college without an adequate knowledge of the problems to be met, and so in the end makes a failure as a teacher, a failure so great that the college teacher is the poorest of them all, unless it is the university teacher. Such a situation, if true, is serious, of course; and something should be done about it. I have been asked to state briefly what I would do. The following is my answer:

1. I should strengthen, not lessen, the research requirement for the Ph.D. degree. Teaching and research are not necessarily incompatible. In fact, I am inclined to think that one cannot be an inspiring teacher without having a real, vital interest in one's subject, an interest which drives one to delve into unknown fields to learn more about it.

2. Scholarship stands first in the list of requisites for good teaching. If the present requirements for the Ph.D. degree are the best for the making of a scholar, and I believe they are, then I see no way of modifying them, especially by way of elimination. If other requirements are deemed necessary, they should be in addition to the present requirements. Much has been said about the narrow field of specialization and the need of broader interests, but all of these re-

marks are general and not specific. There is danger in dilution as well as in specialization. A scholar is not one who knows a little of many things.

3. The professional schools of law, medicine, and commerce do not turn out skilled lawyers, doctors, and business men. It takes years of practice. The professional schools have given them only the basic things on which to build. Why should the colleges demand more of the universities in the training of college teachers? The colleges have certain responsibilities here.

4. Universities should not permit students to leave with an antagonistic attitude toward the profession of teaching. As an interest in the work is one of the primary requisites of a good teacher, the universities should make an attempt to cultivate this interest. This can be done without driving out interest in research.

5. Students should be taught some of the problems which are to be met in the college. Where assistants are teaching, their work should be better supervised. These things can be done best by a series of conferences with someone in the department who is recognized as a good teacher. Someone who has specialized in the problem of the college might well be asked to aid here and there.

6. We do not know the attributes of a good college teacher. Perhaps no two good teachers use the same methods. There should be no attempt toward standardization. Individuality should be encouraged.

FERNANDUS PAYNE, *Dean of the Graduate School*

UNIVERSITY OF IOWA

While the University of Iowa does not have any very formal specific requirements for professional training and teaching on the part of candidates for the doctorate, the faculty is thoroughly alive to the needs of the situation and meets it with more or less effectiveness by the following considerations:

1. Most of our graduate students come in with a certification in education, which means that they have had an elementary course in psychology and certain courses in education.

2. The Department of Education offers a seminar during the first semester. This seminar is an all-evening affair and aims to survey the principal points of professional interest in education as represented by members of the education staff and others who are invited in for specific topics.

3. The faculty urges each department to conduct a department seminar during the second semester to dovetail with the one just described.

4. As in other universities, all the departments make rather free use of graduate assistants, who in this way gain apprenticeship in teaching the departmental subject under favorable conditions.

5. The Graduate College requires a physical examination for all graduate students, and in this examination special attention is given to the discovery of impediments or psychopathic tendencies which indicate need of attention. If in such an examination a psychopathic personality or other form of inferiority

should be revealed, such a person would be discouraged from entering upon the teaching profession. I think there is more and more tendency in all departments to take personality into account in rating the progress of advanced students.

6. We are this year experimenting with the requirement that each candidate who expects to teach shall have an interview with a representative of the Speech Department to determine whether or not he has any impediment of speech or is in need of coaching for the purpose of training in the ability to speak before a class. The matter is being handled informally through the dean's office, and the speech examiner will report to what extent the treatment indicated has been followed and with what success.

C. E. Seashore, *Dean of the Graduate College*

THE JOHNS HOPKINS UNIVERSITY

The nature of the optimum program for the training of college and university teachers is yet an open question at the Johns Hopkins University. Previous practice has been based upon dogmatic opinions. These opinions must be supplemented by research on such problems as will determine the college teachers' duties and responsibilities. Until such time as this research work is done, the committee makes the following suggestions:

Since the college teacher is called upon for such a variety of duties, it is recommended that candidates, who anticipate college teaching, be selected with great care. Students should be selected as soon as possible after they have had reasonable opportunity to determine the field in which they desire to specialize.

The student should work out his doctorate dissertation in the department in which he takes his major work, i.e., in the field in which he expects to teach.

The student should have a certain amount of theoretical instruction and practice in teaching. The quality and quantity of such theory and practice should be determined by the student's major department. It would be highly desirable to give the student an opportunity both to observe and practice teaching in the particular department in which he is majoring, and this work should be under supervision of that same major department.

Joseph T. Ames, *President*

UNIVERSITY OF MICHIGAN

The Graduate School of the University of Michigan presents no concerted program which might be listed under the title, "The Training of College Teachers." This does not mean that the executive board of the Graduate School has not given thought to this question or that training for teachers is not offered here. Perhaps it does indicate that more stress than is warranted has been laid on the acquisition of subject matter in the limited period allotted to the formal graduate work required of applicants for the Master's, and even the Doctor's, degree.

There is, further, a recognition of the fact that a relatively large percentage

of the students enrolled in our Graduate School have had teaching experience, or are holding subordinate teaching positions during such enrolment. The latter group, by contact with experienced teachers, have the opportunity of observing teaching, and, while not taking formal courses in education, are not without training in methods of teaching. A relatively large body of students enrolled in our Graduate School are specializing in education, and thus are having formal training in that field.

The members of a further group, not without influence on total numbers, do not expect to enter the teaching profession, but anticipate doing professional work or expect to work in the fields of applied science.

It has also appeared to us that it is still a debatable question whether, at the present time or in the relatively near future, schools of education are prepared to offer courses which may justly be recognized as "training for college teachers."

G. Carl Huber, *Dean of the Graduate School*

THE UNIVERSITY OF NEBRASKA

An inquiry has been conducted in the several departments of the University of Nebraska regarding the methods employed in preparing prospective college teachers. The results of the inquiry show that no formal program has been adopted in any department. Replies indicate, however, that more attention is given to this subject in various indirect ways than is generally supposed and that the departments regard it as an important problem. A very large proportion of our graduate students, except in the summer term, act as teaching scholars, fellows, or assistants in the various departments. The members of the Nebraska faculty who have expressed themselves are almost unanimous in the opinion that these students receive training which is of great value in preparing them to become teachers. Most of the service rendered by these students is in the form of laboratory instruction, the giving of quizzes, and the like. This work is usually conducted under the close supervision of regular members of the teaching staff. For example, in the Department of Chemistry, all students are required to attend the regular lectures of the course in which they are assisting for the first time. In addition, the teacher in charge of the course meets with all instructors and assistants in his division once a week for a detailed discussion of the teaching problems of the course. A similar practice prevails in a considerable number of the departments in this University.

I shall quote here a statement of Professor C. H. Oldfather, chairman of the Department of History:

> So far as our students are concerned, they are being trained by the apprentice system, which to my mind is the very best that can be devised for this purpose. Practically all of them who take the M.A. and certainly all who take the Ph.D. have been assistants at some time or other. They have conducted quiz sections in that capacity, made out examinations, graded papers, conferred with students, and at times, conducted classes. More than that, they have sat through classes, from the introductory

courses on up, and if they have any sense at all they have recognized that some courses are "gotten across" and others not, and have tried to analyze the reasons. I am confident that for four-fifths of the students that is all the training necessary and that this number make very good teachers, as good as their knowledge of the subject matter allows. The other one-fifth can never be made good teachers, by anybody or by any means. We would not insult the intelligent four-fifths by making them attend a formal course on "How To Teach History." The trouble is that the secondary schools and colleges raise all the pother about the *chance* poor teacher. The likelihood is that such a teacher was never recommended by the department.

In my opinion there are two requisites for teaching: personality and knowledge of the subject matter. The first cannot be taught; the second we try to give. Old Cato's advice to the young orator still holds good: "REM TENE, VERBA SEQUENTUR" ("Hold the facts, the words will follow.")

While Professor Oldfather expresses the attitude of several departments, there are a number of professors who think that some specific training in how to teach should be required of all graduate students who are planning to follow a teaching career.

At the present time a university committee is studying the problem of teaching our Freshman classes. This committee, without doubt, will suggest measures designed to improve the quality of teaching among the younger members of the staff. Any program adopted can easily be extended to include the training of graduate students who are preparing for teaching. The Graduate School of the University of Nebraska will gladly co-operate with other agencies and will consider any program that may be proposed.

There is a side to this question, however, which has not been touched upon. The solution of the problem confronting the universities and colleges today in the recruiting of their faculties, in the opinion of the writer, lies not so much in securing better preparation of teachers as in securing better teachers. The teaching profession today simply does not attract our best students. In the natural course of events the larger universities obtain the best ones, leaving the poorer ones for the colleges. We cannot hope to go far in the solution of this important question until the rewards of the teaching profession are made more nearly commensurate with those in the other professions. A college cannot secure a Ph.D. with some experience, good teaching ability, and a strong personality for $2,400. The writer has just recently received a request from the president of a college for a man with these qualifications to head his department of chemistry at that salary.

FRED W. UPSON, *Dean of the Graduate School*

NEW YORK UNIVERSITY

It has become a commonplace maxim to declare that the strength and prestige of any faculty twenty years in the future will depend largely on the caliber of the assistants and instructors now being employed and the intellectual growth of these younger men, and New York University is well aware of this fact. The

problem of recruiting candidates for these positions is, therefore, fundamental. This is being done in New York University in a variety of ways.

Promising undergraduates, with outstanding intellectual ability and interests, are encouraged to continue further study in our Graduate School and, where especially qualified, are recommended to apply for scholarships. Where it has been felt that a brilliant undergraduate would benefit by a change in environment, and with a conscious desire to avoid "inbreeding," encouragement and assistance are frequently given to students to secure awards in other institutions, with the hope that it will be possible to bring them back as members of our own teaching force.

A limited number of endowed and unendowed scholarships are available in the Graduate School and are open to applicants not only from this but from other institutions; and from the holders of these awards assistants and instructors are, on occasion, appointed. Numbers of young men are brought into the various departments as assistants and instructors directly from other institutions. Methods of securing candidates for such positions vary widely but are uniformly thorough. In most departments a conscious attempt is made to draw men from as many first-class universities and colleges as possible, and good undergraduate training is given almost equal weight with successful graduate work. It is also a generally understood principle that all such appointees are on probation and that retention and advancement depend on service and development.

Given the right selection of personnel, the problem of improvement is greatly simplified. The most important requirement is the mastery of the subject and methods of investigation in the field taught. Unless the degree of Ph.D. has already been attained, encouragement is given and pressure brought to bear to secure the completion of this work. Assistants and instructors are permitted to take a maximum of three graduate courses per year and are exempt from tuition for this work. For 1929–30, 248 such faculty members are registered in the Graduate School, and all department heads testify to the importance of this system on morale and in increasing the value of the men concerned in their undergraduate teaching.

Just as there is variation in methods of selection for appointment, so methods of preparation and improvement, outside of content and methods work, differ from department to department, although Part II of the report of January 10, 1929, of the Commission of the Association of American Colleges on the enlistment and training of college teachers is, in many cases, fairly closely followed. In most departments training is carried on by presenting opportunity to teach under conditions involving some oversight. Normally, every newly appointed instructor has, or should have, a faculty adviser, usually the head or chairman of the department concerned, or another member of the department designated for that purpose. The method followed is usually that of frequent but informal conferences in which professional problems of presentation, emphasis, and organization are discussed freely. Newly appointed, and especially inexperienced, instructors are in some cases invited and expected to attend classes taught by

mature and experienced members of their department. In the cases of courses having several sections, as is true of most elementary courses, one man is normally assigned, either formally or informally, to take oversight of the course as a whole, to keep in close touch with the younger men, and to maintain a reasonable degree of co-ordination as to the work covered, the requirements set up, and the standards maintained. It is felt, I believe, that the result is to develop initiative, resourcefulness, and independence without undue danger to the young teacher or his students.

The system, if it can be so called, places considerable responsibility on the heads or chairmen of the various departments, as each department is allowed to work out its problems in the manner best suited to its particular needs and to its individual members. Although quite informal, it has in the vast majority of instances proved successful not only as far as those men we have kept are concerned but also considering the records of teachers who have received all or the major portion of their early experience with us and who have then gone to other institutions.

The Graduate School of New York University has not been convinced that formal course instruction in methods of teaching college subjects should be required for the Ph.D. degree or usually accredited toward that degree, nor that such courses are necessary, or even advisable, in all cases to the making of a successful college or university teacher. In certain departments one course in methods of teaching may be accredited toward the A.M., and courses in college methods and college administration may be recommended to be taken over and above the normal course requirements for the Ph.D. if the departmental head so desires.

JOHN MUSSER, *Executive Secretary of the Graduate School*

THE OHIO STATE UNIVERSITY

The University has for a number of years offered certain courses of special interest to those graduate students who expect to secure positions on the instructional staffs of colleges, irrespective of their field of specialization. The titles of these courses are: "Foundations of Contemporary Civilization," "Development of Modern Science," "Science Methods and Ideals," "Survey of Higher Education for College Teachers," "Scientific Methods," "Epochs in the History of Thought," and "College Teaching."

More recently, in response to a communication addressed by the Association of American Colleges to the Graduate Schools of the Association of American Universities, the Graduate Council appointed a committee, with Dr. W. W. Charters as chairman, to consider the communication and report its findings and recommendations to the Graduate Council. This committee made an extended study of the situation in the Graduate School of the University and submitted a detailed report. The most important facts contained in the report were published in the April (1930) number of the *Journal of Higher Education,* under the title of "The Training of Ph.D.'s (A Summary of the Teaching Experience and General Training of the Doctoral Students, at Ohio State University)."

Among other recommendations made in the preliminary report was the appointment of a committee to be known as a Committee on College Teaching, to be composed of three members of the Graduate Council of the University and three members of the faculty of the College of Education. This committee was promptly appointed, and at once took up a more detailed study of the whole question of preparation for college teaching. The report of the Committee follows:

In pursuance of the action of the Graduate Council on February 1, 1930, the Committee on the Training of College Teachers wishes to report as follows.

The Committee recommends the use of a basic survey unit on higher education in a sequence of three two-hour courses open as electives to students who have completed one year of graduate work. A major purpose of the unit is to assist students to develop a scientific attitude toward the problems of college instruction and administration. To this end this unit should acquaint the students with the major conflicts found in educational aims, administration, organization, and instruction in the field of higher education. It should acquaint the students with the best practices of carrying on university and college work in so far as these are known. It should also make provision for participation in instruction by graduate students wherever this is practicable.

Assuming that advanced students will be able to read literature rapidly, the unit should be so constructed as to give them access to a generous supply of carefully selected references bearing upon the topics of the courses. Such a procedure will allow time in the class periods for the discussion of issues and principles.

Believing that the training of college teachers should be a co-operative enterprise, the Committee recommends that the courses should be prepared and presented jointly by members of the faculty of subject-matter departments and the Department of Education. To provide unity and continuity in the study of the problem which will continually present new phases, the establishment of a standing committee of the council on the training of college teachers is recommended by this Committee.

Since approximately 60 per cent of the Doctors of Philosophy graduating from this institution engage in teaching, the Committee recommends to the departments of the graduate school that, where this is consistent with departmental policy, credit for the survey unit be allowed toward the fulfilment of course requirements for the degree for such students as may elect to carry it.

The Committee presents the following specifications for a survey unit which has been outlined in tentative form under its direction.

REQUIREMENTS AND SPECIFICATIONS FOR THE SURVEY UNIT

(Three courses to be offered in the Ohio State University by Professors B. H. Bode, W. W. Charters, H. G. Hullfish, S. L. Pressey, Ward G. Reeder, and members of the subject-matter departments.)

1. The courses are organized for prospective college teachers who are majoring in departments other than education. Graduate students majoring in education are not eligible to take the courses for credit. One year of graduate work is a prerequisite for admission to the course.
2. The courses are three in number, are consecutive, and will be offered during the Autumn, Winter, and Spring quarters. Each course carries two hours' credit and

is a prerequisite for admission to the succeeding course. Credit, if earned, will be granted for one of the courses where the succeeding courses may not be pursued.

3. In order that the needs of each student may be met with maximum effectiveness, a plan of co-operation, both with reference to the teaching of subject matter in his major department and the observation of such teaching by skilled instructors, shall be worked out with the subject-matter departments in which students are enrolled.
4. In order to secure unity and effectiveness in the presentation of subject matter, each topic will be studied and discussed with the following considerations in mind:
   a) All subject matter shall be selected and taught for the purpose of throwing into relief the aims and purposes of higher education.
   b) The major problems involved in each topic and the best solutions of these problems will be considered.
   c) A work sheet, or sheets, for each topic, together with a selective and annotated bibliography to guide the student in his reading and thinking, shall be presented. Required readings, in each instance, shall be starred. Steps shall be taken to see that all suggested and required readings are immediately available in sufficient quantity for the use of the students.
   d) All instructors will normally attend each of the two-hour weekly class meetings. Responsibility, however, for conducting each meeting shall be assigned to one instructor.

A TENTATIVE OUTLINE OF THE UNIT

1. The functions of the college, the junior college, the professional school and the graduate school.
2. Teaching methods
   a) The laws of learning and methods of study
   b) Teaching students to think
   c) The individualization of instruction—the gifted, the maladjusted student
   d) The measurements of the results of instruction—objective tests
   e) Teaching and library facilities, selection and use of textbooks
   f) Experiments in college teaching—the Wisconsin Experimental College, Rollins College, Antioch College, honors courses, the University of Cincinnati, tutorial schemes, etc.
3. Teaching under supervision
4. The students
   a) Individual differences among students
   b) Orientation and guidance of students
   c) Selection of students for admission, sectioning, graduation
   d) Student life and activities—health, fraternities, extra-curricular activities, honor system, etc.
5. The faculty
   a) The traits of good instructors
   b) The preparation required for various college positions
   c) Keeping abreast of one's profession—learned societies, relation of teaching to research—scientific journals
   d) Problems of employment—securing positions, salaries, promotions, tenure, pensions and insurance systems, teaching-loads
   e) Academic freedom and responsibilities

6. Curriculum organization
   a) Present status of college curricula
   b) Present trends in curriculum construction
   c) Required and elective courses
   d) Experimental curricula
7. The college and university—treated historically, and comparatively at home and abroad
   a) State and private institutions of higher education
   b) Organization and government
   c) Financial support and cost
   d) Student accounting—the registrar
   e) Accrediting agencies

The report recommends the adoption of a course, extending through one year (outline of course given in report), open to students who have had one year of satisfactory graduate work and who expect to secure positions as college teachers. Each department is asked to provide under competent supervision a certain amount of practice teaching for the benefit of all students in the department who are prospective college teachers. This report was adopted and is now in force at the University.

The courses outlined are not open to those who are specializing in the general field of education. It is believed that such students will secure the necessary training and practice in other courses required of all the students in the various departments of the College of Education.

The Committee on the Training of College Teachers is organized as a standing committee with instructions to continue the study of this general subject, to keep in touch with the work that is being offered now in the University for the training of college teachers, and to make such further reports from time to time as the Committee may deem wise.

WILLIAM MCPHERSON, *Dean of the Graduate School*

UNIVERSITY OF OREGON

As to the training of college teachers, we are doing the following in a general way: During the Fall Quarter there is a course offered on "Recent Movements in College Teaching and Organization." This is taken by graduate students. An effort is made to familiarize them with the newer movements in the field through reading and lectures. Each student works through one or two surveys and reviews a number of books of the type of Richardson's *A Study of the Liberal College*. This course meets two hours a week for the Fall Quarter.

During the Winter Quarter the work is continued through a similar course which devotes itself entirely to "Objective Measurements" and which is given by Dr. C. L. Huffaker, of the School of Education, and Dr. Howard Taylor, of the Psychology Department, who deals with mental testing and personnel work. The effort here is simply to give the students an intelligent understanding of what these two new types of procedure mean in higher education.

In the Spring Quarter an attempt is made by some of the departments to follow up the training which they give their graduate assistants. We have something like sixty-two graduate assistants here who are virtually fellows. They all assist as paper-readers, quiz-directors, etc. A few of the departments give systematic attention to training these men. The departments which thus far have done the most valuable work are physics and chemistry. There is also some effort made in psychology and education.

For the last four years we have had a systematic program of experiments and have published one series of monographs. We also have another series of experiments under way which in most cases are almost finished. A description of them follows:

1. *Experiment with entrance tests in English for Freshmen.*—At present the test in use for segregating Freshmen according to ability to achieve success in the University courses in English is one made up by the Oregon State College and is generally used by higher institutions in the Northwest and by mutual agreement. This test and three others were evaluated statistically. The test in use was found to be a very poor test for that purpose. Two other tests made up at the University of Oregon were found to be much better. By analyzing the factors measured by the various tests, two were found which were better than any of the others for the purposes required. A test has now been built around these two factors which segregates the Freshmen according to ability with just one-half the error made by the test in use at present. This test is now being refined still farther.

2. *Experiment in student segregation in the social-science orientation courses.*—This experiment was concerned with the effect of segregating in classes students of high ability and students of low ability, the effect of placing low-order students in classes with students of high ability, and the effect of placing students of high ability in classes with students of low ability. The results showed that students of low ability did much poorer work when placed in competition with students of high ability and that students of high ability did much poorer work when placed in competition with students of low ability. Students of either high or low ability did better when placed in classes that were made up of people corresponding to their ability level. This experiment seems quite significant as a means of throwing light upon possible procedures in providing special training for superior students and the enhancement of scholarship generally. The effect which an intellectual environment above or below their own level has upon students has never been worked out, and this experiment gives some apparent significant leads. Experimentation of this type with a large number of classes should yield valuable results.

3. *Experiment in predicting aptitude for the courses given in the School of Commerce at the University of Oregon.*—This year's work consisted of the evaluation of a test developed previously, and of its refinement and reorganization in the light of data concerning students measured previously secured through the use of the test. The test is now arranged in its final form and ranks

on a par with the standardized aptitude tests in other fields which are now on the market. Apparently it is the only test of its type in existence. It has been written up in magazines in the commerce field and has attracted considerable attention.

4. *Experiment to determine the extent to which laboratory drawings made by the students serve as an aid to achievement.*—This experiment was conducted in the biology laboratory. One half the laboratory sections were given drawings to use in the laboratory while the other half of the laboratory sections made their own drawings. The results showed that students who made their own drawings were markedly handicapped as compared with students who were not required to make drawings. The results also showed that doing away with the making of laboratory drawings resulted in the saving of 42 per cent of the time formerly devoted to laboratory work. These results indicate the possibility of enriching the course, or of reducing the number of hours of laboratory work required and reducing the number of laboratory assistants required.

5. *Experiment in improving the spelling ability of college students.*—This experiment is based upon a psychological analysis of the errors made in spelling certain words. A list of 1,000 words misspelled by college students was prepared, and the experiment was conducted in the School of Journalism. The Department of English is carrying the experiment farther during the Spring Quarter. Apparently the results are positive. The spelling of college students is improved without in any sense teaching spelling and without burdening the student. The procedure requires three class hours each quarter for each class used. Results obtained in the English Department during the Spring Quarter should be conclusive and final.

6. *Experiment in methods of teaching in the field of economics.*—This is a continuation of Professor Victor Morris' experiment. Two sections taught by Professor Morris were used. One section was taught by the lecture method; the other, by a special method of approach through problems. The second method proved itself considerably better for teaching students of less than average ability. The students of better than average ability did about equally well by either method. The findings of the experiment indicate that worth-while results may be obtained in this field through segregating students according to ability and adapting teaching methods to the types segregated.

7. *Experiment in predicting aptitude for courses in journalism.*—Some test material has been evaluated, and one tentative test given a very limited trial. There is much need for tests of this type in the field of journalism, but no such test has been devised up to date. The work here at the University of Oregon might be characterized by saying that it is well started.

8. *Evaluation of examinations.*—This is a study conducted with a view toward the improvement of the examinations in use, and of the essay type of examination particularly. A study of the examinations given at the University of Oregon was used as a basis. From this study tentative criteria for examinations were set up, prevalent weaknesses noted, and tentative procedures for a

testing program suggested. Statistical analysis of several tests added materially to the findings of the study, and further statistical analysis of a sufficient number of examinations would settle quite definitely most of the controversial questions raised at present.

9. *Experiment to determine the value of teaching Freshmen how to study, how to schedule their time, etc.*—This experiment is in its third year. Results of this experiment can only be evaluated after the students have been in college long enough to have accumulated a good share of their college grade record. Preliminary study of the data available at present indicates two things: better chance that these students will continue in college and better achievement in all college courses for them.

10. *An experiment in problem-project methods of teaching vs. the lecture method.*—This experiment is being continued through the Spring Quarter in the courses in educational psychology.

The most important step in my opinion would be the better organization of the work and the training of the graduate assistants. In some departments very little is done except that the student is given certain detailed work to do, the significance of which he frequently does not understand. To work out this plan, it is necessary to find one man in each department who is himself a good teacher, who is interested in the problem, and who will give the students the benefit of his coaching and time. I have presented this need to the president and also to the dean of the College of Liberal Arts, as well as the other deans, and believe that a distinct improvement may be looked for in this direction.

HENRY D. SHELDON, *Dean, School of Education*

PRINCETON UNIVERSITY

The Postgraduate School at Princeton is limited to two hundred students. About three-quarters of these are prospective teachers, and the majority of them have either had some previous experience as teachers or come to us from institutions which maintain departments of education. Approximately one-third of the students in the Graduate School are graduates of Princeton. Practically none of these have had either teachers' training or practical experience in teaching. There are sixteen departments of graduate study, and the two hundred students are rather unevenly divided among these. Generally speaking, the students in the laboratory courses remain to take the Ph.D. degree. Those in classics, English, history, and generally in the subjects strongly represented in preparatory and high schools tend to work for the Master's degree, leave to take positions in schools at the end of one or two years' study, and re-apply for admission later to work on the Doctor's degree.

Thus, taking a cross-section in any one year, there are always a considerable number of students who have had some practical experience in teaching in the subjects covered in the high-school curriculum.

The practice of employing graduate students as part-time assistants in the

scientific departments is common here as elsewhere in the United States. These students get some practical experience, though the question as to how valuable this is for them, and the question as to how wise this practice may be for the undergraduate instruction, is too large to raise in a report of a few hundred words.

To sum up in answer to the questions asked: There is *no* general program for preparing prospective college teachers. In a very small graduate school such as this we are able, by precept and example, to do something. Some departments are doing much. Practically all departments are placing their men in teaching positions. One department may be able to place its men well without teaching experience; another may not be able to do so. Hence, specific practices vary greatly from department to department.

My feeling is that emphasis should be placed by the professors with whom graduate students work in candidacy for the Ph.D. degree on the necessity of learning how to teach—not necessarily by taking courses in pedagogy, but at any rate by self-instruction through reading and practical experience. Along with the great good which has come with the acquisition of training in research in the graduate schools of the country has come the entirely wrong impression that original contribution to knowledge (often of a most trivial character) is of itself sufficient. Research is an important element in the training of a teacher—possibly important in itself in some cases, but certainly in most cases a means to an end—the end being a well-rounded scholar who from early middle age on may be an inspiring teacher of the next generation.

AUGUSTUS TROWBRIDGE, *Dean of the Graduate School*

YALE UNIVERSITY

The primary function of the Yale Graduate School is held to be to assist students for the Ph.D. degree to acquire a thorough knowledge of their fields of study and to explore a little farther than has previously been done some part of those fields. To this end there are available for them all the resources of the University in staff and equipment. They are not accepted as candidates for the Ph.D. degree until they have passed comprehensive examinations, either written or oral, and absolved all the requirements in language, comprising French and German and Latin also, and in several departments of study. In these respects there is no distinction whether a student intends to become a teacher or an investigator.

Rather more than two-thirds of the recipients of the Ph.D. degree in any one year soon obtain positions as college teachers; and a scant third, mainly in the natural sciences, find places in research laboratories of universities or of industrial corporations. In subsequent years, however, there is a good deal of shifting about among the two classes, with a trend toward teaching as a profession. Again, it is discovered that, with rare exceptions, recipients of the Ph.D. degree have all had some experience in teaching before completing their work for this

degree. The situation being as it is, it has not seemed advisable to make a sharp distinction between prospective teachers and prospective investigators.

Still, the methods of graduate study lean toward prospective teachers. In the humanistic studies, for instance, most of the work is conducted through the seminar, where students present papers and are subject to criticism in form and method as well as in content. A certain number are also appointed as readers of papers in large undergraduate courses, which they are required to attend, and thus have an opportunity to observe how various subjects are taught. In the natural sciences, a much larger number, somewhat above a hundred, are taken into the laboratories as assistants in undergraduate work under the direction of professors of the first rank, from whom they receive direct instruction in the methods of teaching. In these ways the most competent graduate students may learn their art by observation or practice.

Moreover, Yale maintains a Department of Education on a graduate plane, with seminars open to all students in educational psychology; in the history, or the philosophy, or the principles of education; and in the organization and function of the American college. There is no compulsory attendance. But students who expect to become teachers are advised to do some work in education, especially to take part in the seminar dealing with the main problems of the college of the liberal arts, such as concern teaching methods, curricula, student bodies, and administration. As an experiment for next year, a member of the staff in education and a member of the staff in chemistry plan to conduct a joint seminar for the discussion of the specific problems that confront instruction in chemistry, with a view to an extension of the project to other subjects if the *liaison* in this instance proves successful. These indications of closer co-operation between education and other branches of study seem to point in the right direction.

W. L. Cross, *Dean of the Graduate School*

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